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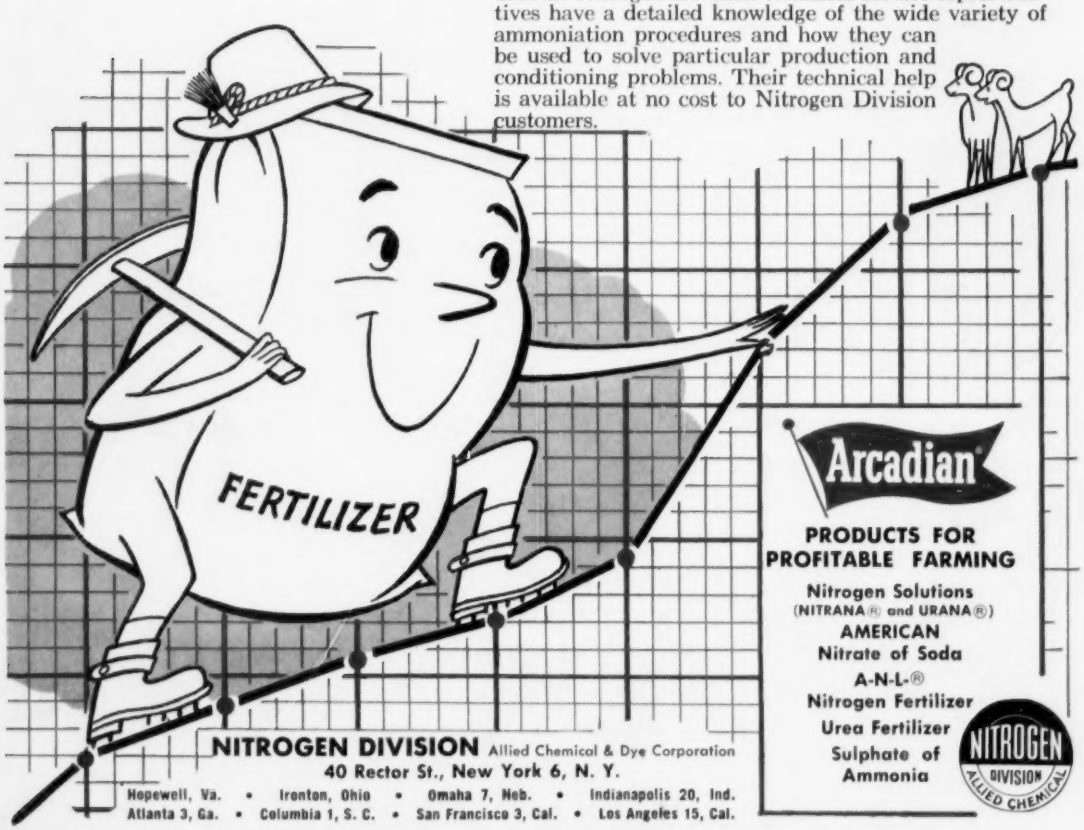

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A-N-L-®
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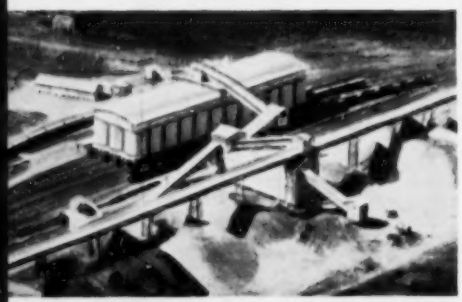

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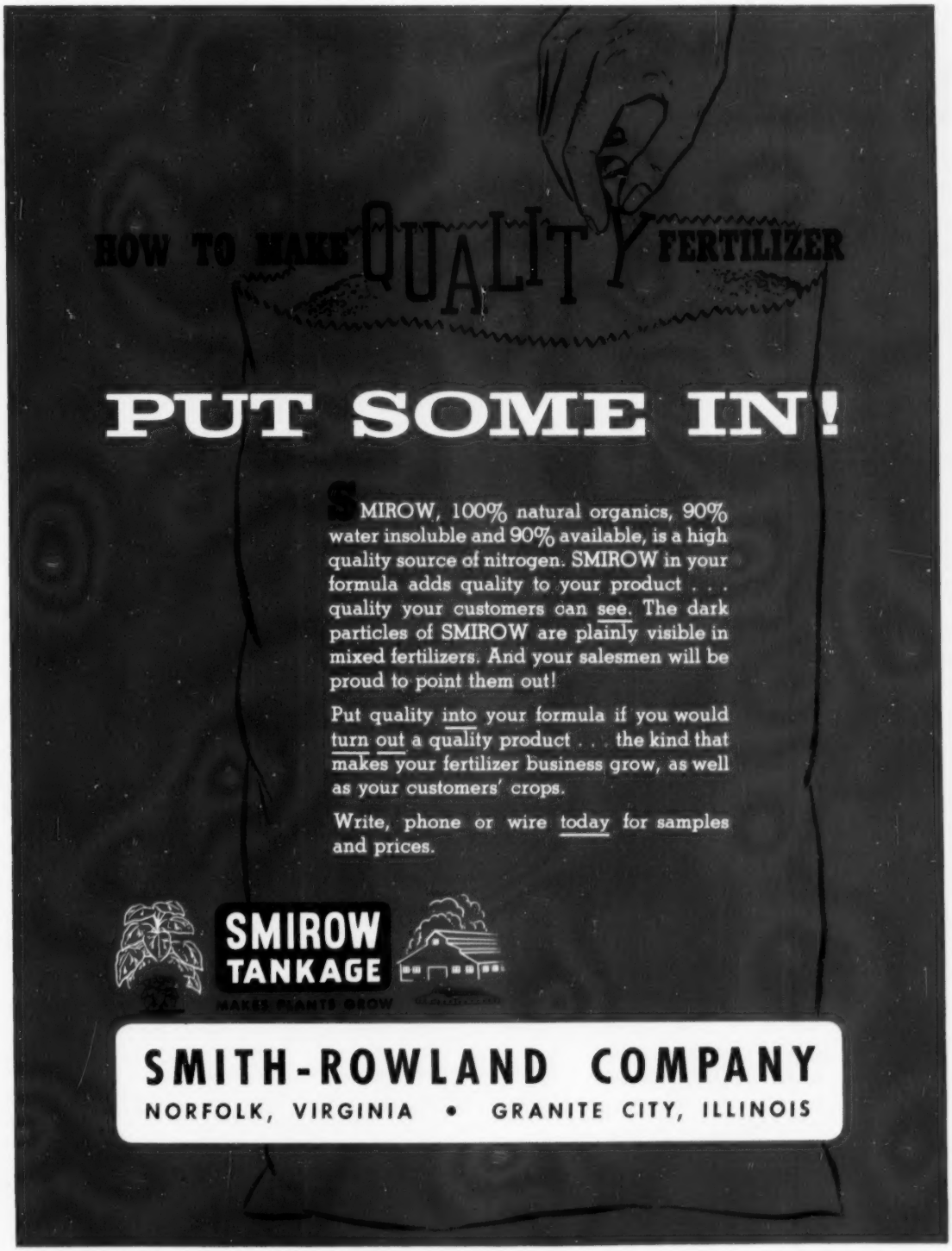
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COMMERCIAL FERTILIZER

ESTABLISHED 1910

January, 1955

Volume 90 No. 1

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JUST AROUND THE CORNER

By Vernon Mount

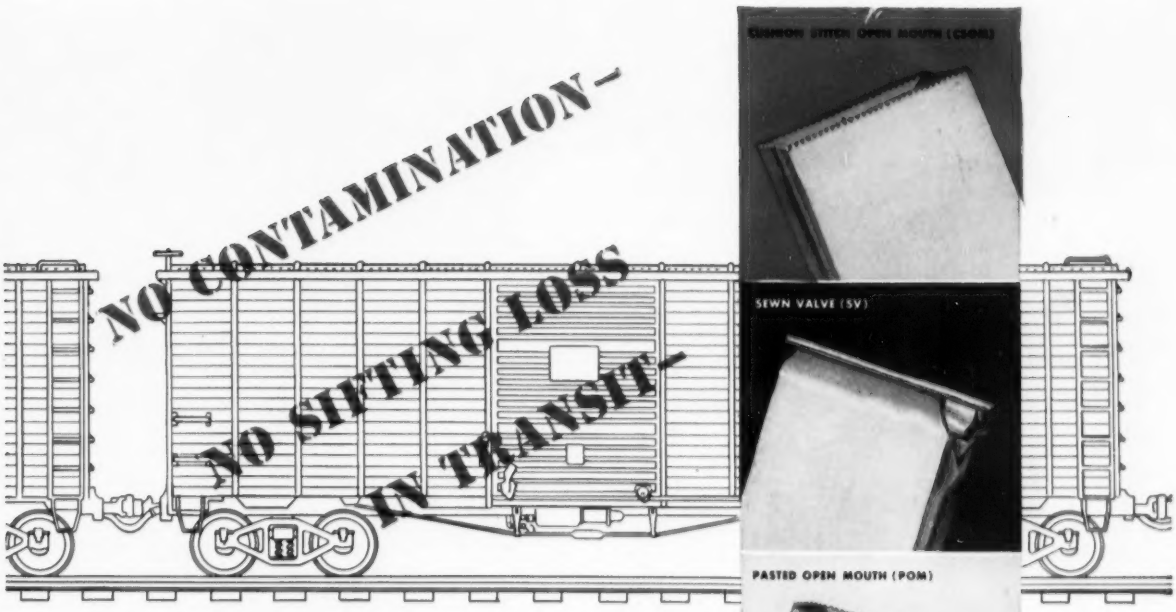
FAR EAST is a very doubtful area. Communist China, as I have said before, is well out from under the USSR thumb, and brash where the Russians are careful not to go too far. As I have said, the Russians are probably seriously worried that China may get them into a war for which they are not ready.

JAPAN is approaching a doubtful position. We are kidding ourselves that the change of administration there is good. Hatoyama, the new Premier, has a very soft spot for the Communists, and there's no telling when he may move in their direction. Nor what could come of that with China itching to move into Formosa.

NO WONDER everybody predicts that we will sustain our military program at the present level, and that we will forget budget-balancing in favor of international power-balancing. It could be a lot more important...and very suddenly, too.
SO PLAN 1955 with the idea that business will still go along in tandem with materiel production. The Millenium is a long, long way off.

Yours faithfully

Vernon Mount



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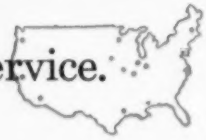

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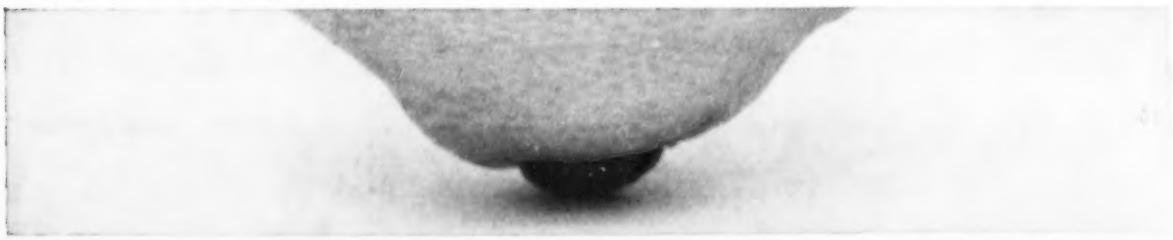

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are turning to

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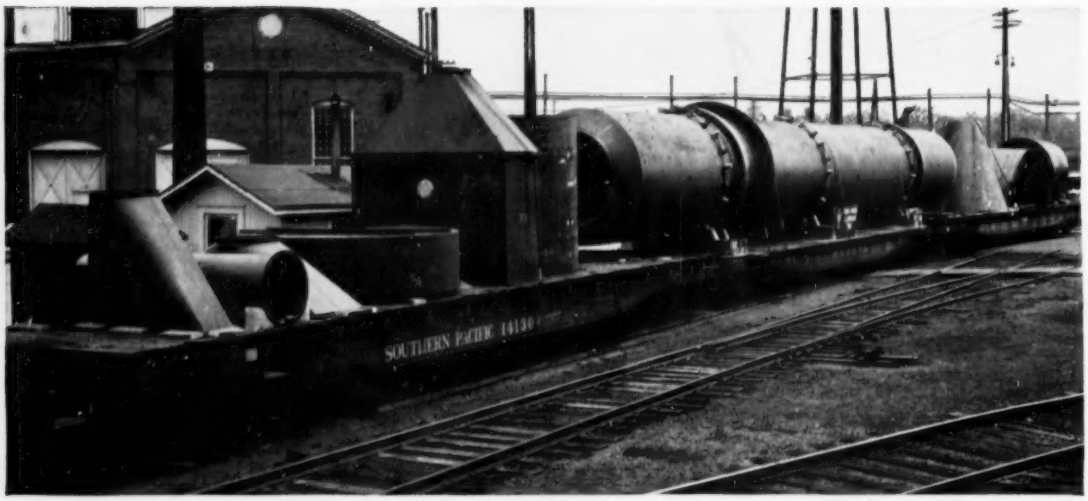
to speed production ... reduce drying costs



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• DURING 1954, sales of 1-1-1 ratio fertilizers (such as 10-10-10) showed a marked increase—more than any other mixture percentage wise. This is evidence of the fact that the big "push" for nitrogen by agronomists, agricultural colleges, farm publications and others is taking effect. And, there's every indication that the trend will be even stronger this year as more farmers find out just how important nitrogen really is to their farm profits.

Many states are now engaged in state-wide pasture-improving programs that are bound to boost the sale of high-nitrogen fertilizers, since nitrogen is the most important element in any effective grass pasture program.

Farmers are learning too that *earlier* application in the spring means earlier grass growth and a longer, more productive grazing season. That means that your dealers should be stocked very soon.

Non-leaching USS Ammonium Sulphate is best for early spring

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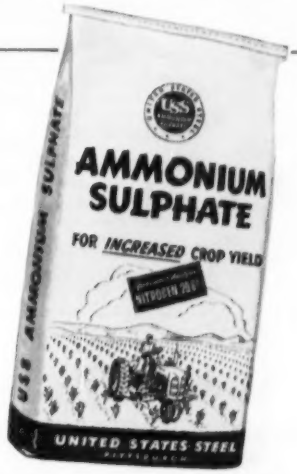

USS AMMONIUM SULPHATE

5-74

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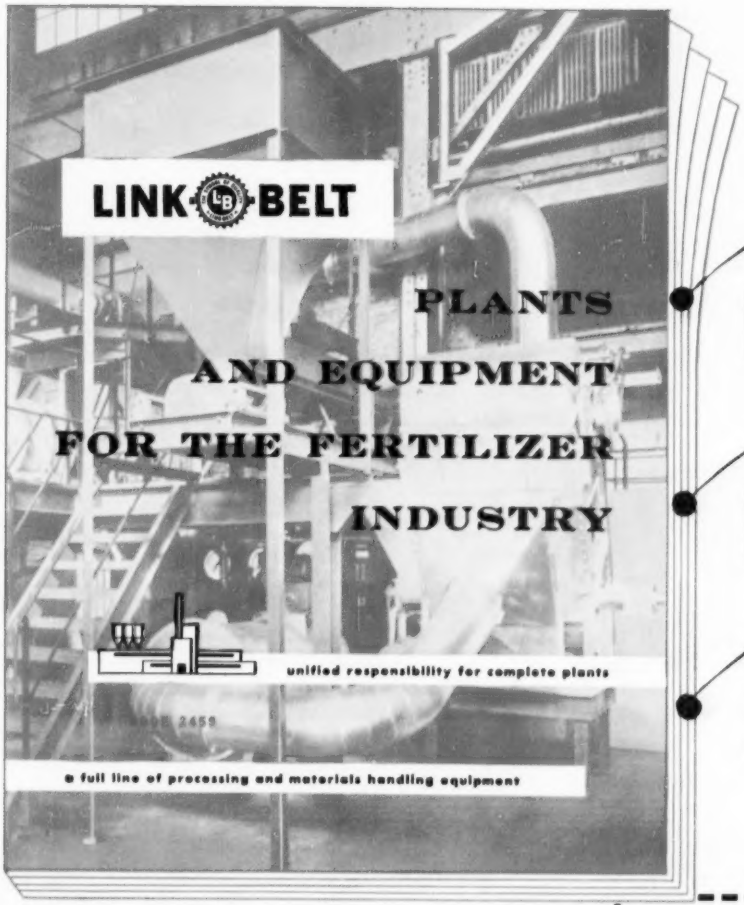

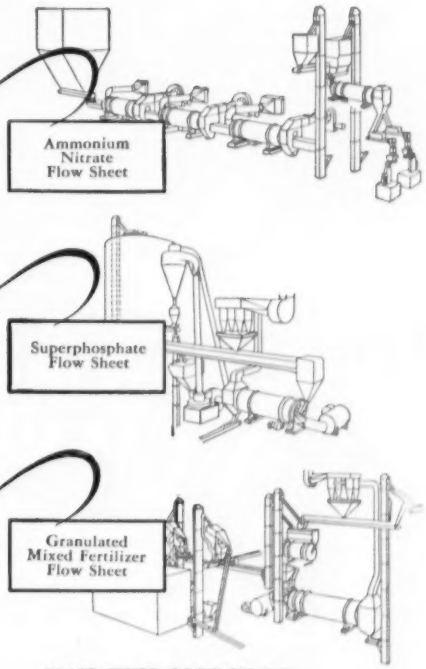

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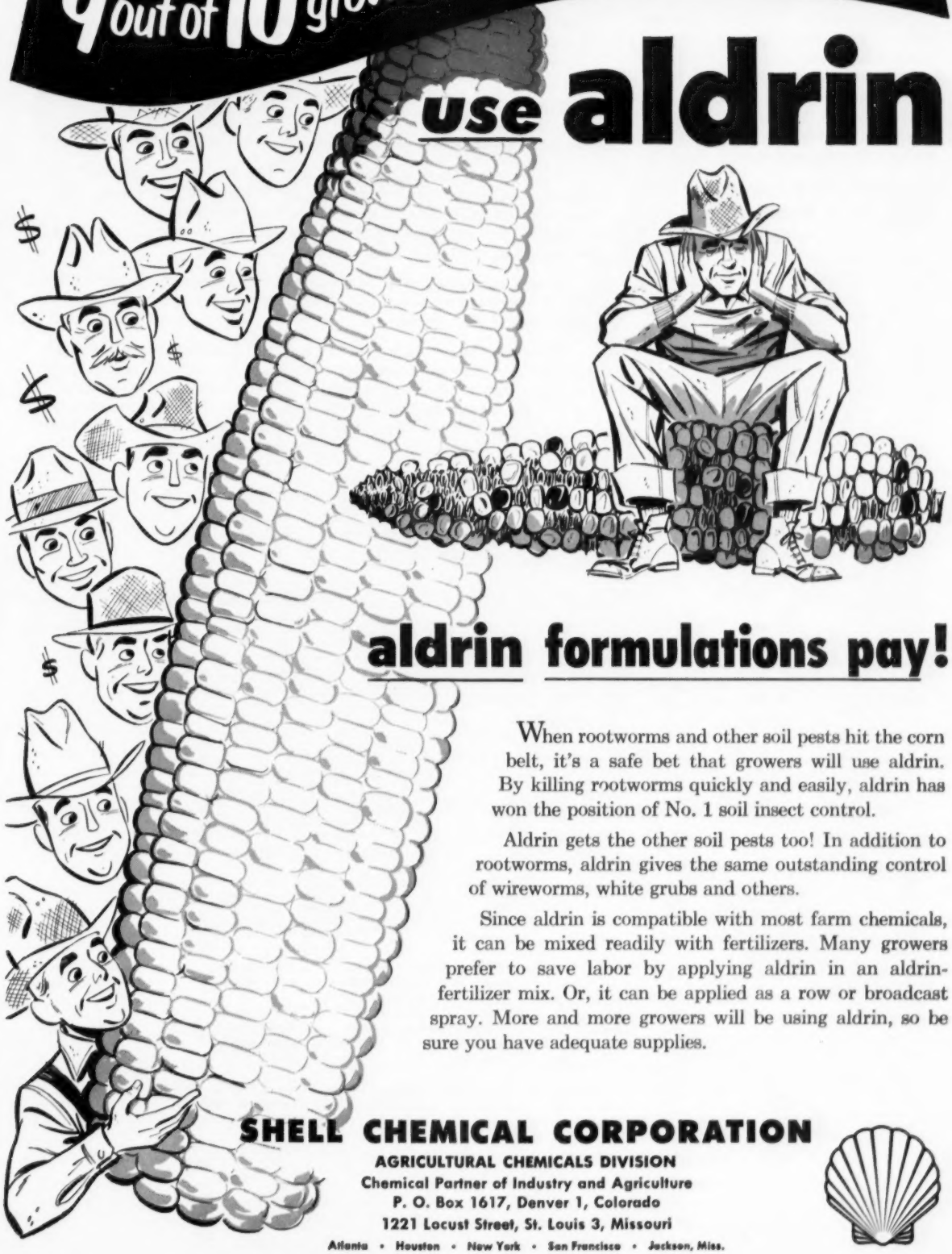
9 out of 10 growers who treat for soil insects

use aldrin



aldrin formulations pay!

When rootworms and other soil pests hit the corn belt, it's a safe bet that growers will use aldrin. By killing rootworms quickly and easily, aldrin has won the position of No. 1 soil insect control.

Aldrin gets the other soil pests too! In addition to rootworms, aldrin gives the same outstanding control of wireworms, white grubs and others.

Since aldrin is compatible with most farm chemicals, it can be mixed readily with fertilizers. Many growers prefer to save labor by applying aldrin in an aldrin-fertilizer mix. Or, it can be applied as a row or broadcast spray. More and more growers will be using aldrin, so be sure you have adequate supplies.

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Joint NFA-APFC Meet In June

The Greenbrier at White Sulphur will be the scene June 13-15 of a joint meeting of National Fertilizer Association and American Plant Food Council, destined to merge July 1 as the National Plant Food Institute. The hotel will accept reservations beginning January 15.

International Horticultural Congress In Netherlands

The 24th international horticultural congress will be held in Scheveningen, Netherlands, August 29 to September 6, with pre-congress excursions starting August 25th. For full information write Secretary, XIVth International Horticultural Congress, Ministry of Agriculture, Bezuidenhout 30, The Hague, Netherlands.

Sou Weed Conference St. Petersburg, Jan 17-19

The Eighth Annual Southern Weed Conference is scheduled to be held in St. Petersburg, Florida, January 17-19, 1955 at the Soreno Hotel.

Michigan Symposium February 14-16

The School of Agriculture of Michigan State College is sponsoring a Centennial Symposium "Nutrition of Plants, Animals, and Man" February 14-16, 1955. The program is designed to primarily interest professional people concerned with the broad field of nutrition rather than the general public. A number of speakers with national, as well as international, recognition will participate.

Colorado Group Annual Meeting

The Board of Directors of the Colorado Agricultural Chemicals Association has announced that its annual meeting will be held on Friday, January 28, 1955 at the Cosmopolitan Hotel in Denver. The main activity of these annual meetings is the reports of the State and industry committee chairman on the proposed changes in the agricultural chemicals recommendations for the ensuing season, and discussions thereon.

The meeting will be followed by the customary banquet to which guests and wives are invited. All members of similar associations in other States and all industry people are invited to these sessions, but advance notice of attendance should be given to the Association's president, W. D. Smith, P. O. Box 5510, Denver 17, Colorado. Hotel rooms are available for out-of-town guests and members on notification to Mr. Smith.

VPI Series Completed

A series of meetings sponsored by the VPI AES was held during November and December in Virginia to present a program for more efficient use of fertilizer on field crops. The meetings ran from mid-morning to mid-afternoon and were addressed by 8 members of the VPI staff, headed by chairman W. H. Daughtry.

It Seems to Me

by BRUCE MORAN

There may be pessimists among the higher echelons of the US economic community, but we don't know who they are. The record of capital investments made and planned certainly does not allow for any feeling that 1955 and the years ahead are to be anything but fine and wonderful.

Yet, I am old enough to remember the bouyant years of the late 20's, when we were all so sure we had found the answer to perpetual prosperity.

It seems to me this is a time for optimism tinctured with reason . . . a time to keep feet firmly on the ground while head and heart soar with the renewed spirit which is so typically American. There is every reason to expect this nation of ours to keep on the upward path which it has traced, with occasional set-backs, over the past hundred years.

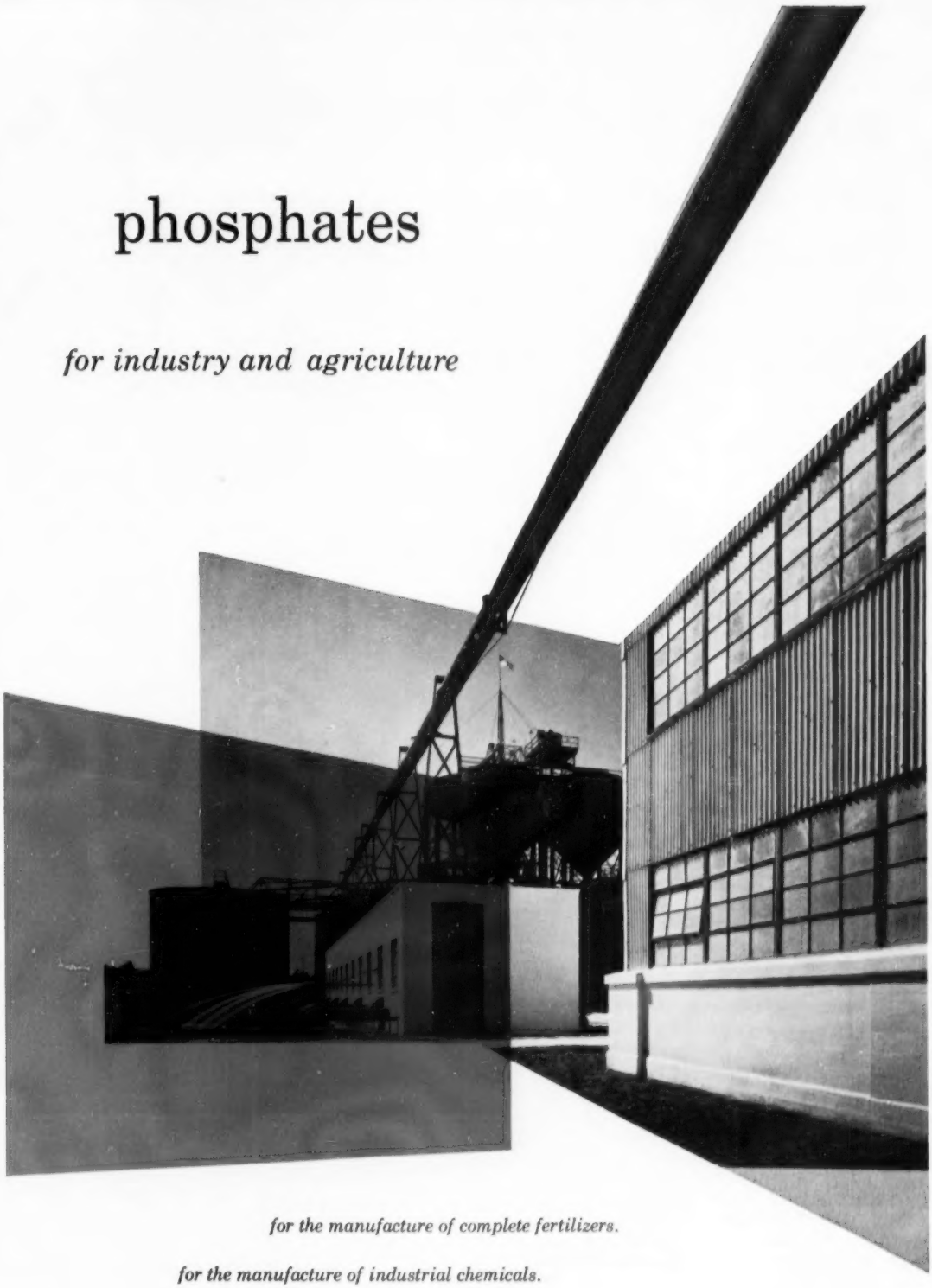
And there is every reason to expect the fertilizer industry will follow the pattern which has doubled its size in a single generation. We have only begun to reap the rewards of our patient work with the farmer,—and he has only begun to reap the kind of crops fertilizer will help create for him in the future.

INDUSTRY CALENDAR

Date	Organization	Place	City
Jan. 17-19	Southern Weed Conference	Hotel Soreno	St. Petersburg, Fla.
Jan. 19-21	Pacific N.W. Ag. Chemical	Benson Hotel	Portland, Oregon
Feb. 7-9	Southern Ag. Workers		Louisville, Ky.
Feb. 17-18	Midwest Soil Conference	Palmer House	Chicago, Ill.
Feb. 27-28	Southern Fertilizer Safety	Jung Hotel	New Orleans, La.
Mar. 7-9	NACA	Chase-Park Plaza	St. Louis, Mo.
June 13-15	NFA-APFC	Greenbrier	White Sulphur Springs, W. Va.
June 28-30	Pacific N.W. Conference		Boise, Idaho
July 14-15	Southwest Grade Hearings	Buccaneer Hotel	Galveston, Texas

phosphates

for industry and agriculture



for the manufacture of complete fertilizers.

for the manufacture of industrial chemicals.

ground rock phosphate for direct application to the soil.

phosphate minerals division

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NFA REPORTS '53-'54 SEASON CONSUMPTION

By JOHN F. GALE NFA

An estimated 20,290,549 tons of all fertilizers were used in the United States during the year ended June 30, 1954. The second highest total ever recorded in a fiscal year, according to a compilation made by The National Fertilizer Association.

Compared with 1952-53 consumption of 20,603,448 tons, the record high, this is a 1.52 percent drop in tonnage of fertilizer. However, estimates made by fertilizer control officials in many states indicate that plant nutrient consumption in the past "fertilizer year" was somewhat higher than the 5,648,016 tons reported used in all fertilizers including phosphate rock, gypsum and so forth from July 1, 1952 to June 30, 1953.[1]

Except in instances where they cannot be filtered out, these figures do not include phosphate rock, colloidal phosphate, gypsum, manure, sulfur and soil amendments used by farmers and others. Also not shown is the amount of fertilizer produced by Tennessee Valley Authority or distributed directly by United States Department of Agriculture. These two agencies together distribute a sizable amount of fertilizer, usually in excess of 100,000 tons annually.

The figures in this report are supplied for the most part by fertilizer control officials in many of the states. Other figures are preliminary estimates based on fertilizer tax tag sales, fertilizer shipment reports made for taxing purposes and industry sources.

It is likely that some 97 to 98 percent of the total was used on the farm. The balance, until recent years

(Continued on page 28)

[1]FERTILIZER CONSUMPTION IN THE UNITED STATES, 1952-53 By Walter Scholl, Hilla M. Wallace & Esther I. Fox, Fertilizer and Agricultural Lime Section, SWLRB, ARS, USDA.

1953-54
FERTILIZER CONSUMPTION IN THE UNITED STATES (WITH COMPARISONS)

(Short Tons)

STATE	1951-52[1]	1952-53	1953-54[2]
NEW ENGLAND	432,625	430,282	404,565
Maine	197,219	203,279 R	176,195
New Hampshire	19,609	20,600	15,812
Vermont	31,004	23,270 R	23,569
Massachusetts	87,132	82,004	84,623
Rhode Island	15,552	14,829	13,941
Connecticut	82,109	86,300	90,425
MIDDLE ATLANTIC	1,558,551	1,543,639	1,476,000
New York	633,339	666,146	607,000
New Jersey	264,494	182,550	198,000
Pennsylvania	660,718	694,943	671,000
EAST NORTH CENTRAL	3,815,770	4,193,512	4,089,631
Ohio	1,039,847	1,107,244	1,075,000
Indiana	1,038,430	1,122,758	1,100,000
Illinois	787,725	970,788	916,045
Michigan	574,766	592,275	574,970
Wisconsin	375,002	400,447	423,616
WEST NORTH CENTRAL	1,463,333	1,804,876	2,013,303
Minnesota	215,729	258,432	315,000
Iowa	401,383	531,181	628,664
Missouri	525,146	578,067	596,920
North Dakota	31,104	38,320	47,271
South Dakota	10,707	14,863	23,000
Nebraska	92,229	144,412 R	196,000
Kansas	187,035	239,601	206,448
SOUTH ATLANTIC	6,555,174	6,941,602	6,655,582
Delaware	80,130	84,281	92,793
Maryland	292,625	307,783	323,000
D. C.	2,541	2,750	2,600
Virginia	857,998	832,138 R	777,524
West Virginia	99,774	87,280	76,916
North Carolina	1,911,085	1,849,863	1,815,572
South Carolina	974,966	1,000,764	936,481
Georgia	1,285,268	1,427,251	1,361,254
Florida	1,050,787	1,349,492	1,269,442
SOUTH CENTRAL	4,742,311	4,334,752	4,229,948
Kentucky	602,869	581,309	568,629
Tennessee	595,425	577,615	523,300
Alabama	1,336,192	1,127,893	1,074,893
Mississippi	817,413	657,779	677,550
Arkansas	356,360	376,130	365,940
Louisiana	326,114	313,160	325,219
Oklahoma	130,578	124,104	130,126
Texas	577,360	576,762	564,291
WESTERN	1,261,939	1,354,785	1,421,520
Montana	22,781	26,000	27,500
Idaho	68,300	74,000	79,000
Wyoming	6,630	7,000	7,500
Colorado	47,183	48,974 R	47,611
New Mexico	19,027	27,155	21,190
Arizona	109,210	110,515	126,535
Utah	30,050	31,000	32,000
Nevada	2,763	3,592 R	3,324
Washington	86,682	93,000	91,159
Oregon	105,817	130,030	155,374
California	763,496	803,519	830,327
UNITED STATES	19,829,703	20,603,448	20,290,549

Prepared by: The National Fertilizer Association.

[1] Revised figures—"Commercial Fertilizers, Consumption in the United States, 1951-52," by Walter Scholl and Hilda M. Wallace, Bureau of Plant Industry, USDA.

[2] Preliminary—subject to revision. Margin of error may be large.

R Revised.

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FAO REVIEW OF WORLD-WIDE PRODUCTION-CONSUMPTION

Prepared by
G. W. Cooke, Consultant,
Land and Water Use Branch
Agriculture Division

[1]Dr. G. W. Cooke is on the staff of the Chemistry Department of the Rothamsted Experimental Station, Harpenden, England. This Review was prepared by him under the general direction of Mr. H. J. Page, Soil Improvement and Management Specialist, FAO, Rome.

NITROGEN PRODUCTION: In years ending 30 June 1953, 1954 and 1955[1]

Metric tons of Nitrogen (N)

	1952/53	1953/54	1954/55
EUROPE			
Austria	100,567	107,830	107,830*
Belgium	176,456	208,035	212,405
Czechoslovakia[1]	30,300*	30,300*	30,300*
Finland	5,100	16,500	17,000
France	288,300	292,130	320,000
Germany Fed. Rep.	627,800	650,000	675,000
Germany Soviet Zone[2]	213,000*	213,000*	213,000*
Hungary[2]	4,000*	4,000*	4,000*
Iceland		565	6,500
Italy	212,527	254,800	300,000
Netherlands	245,600	255,000	270,000
Norway	165,290	187,000	194,000
Poland	65,000*	65,000*	65,000*
Portugal[3]	6,049	6,049*	6,049*
Spain	27,000	38,000	38,000*
Sweden	24,170	28,628	29,000
Switzerland	15,000	11,000	11,000
United Kingdom	312,000	316,000	316,000
Yugoslavia[3]	6,700	6,700*	6,700*
Total	2,524,859	2,690,537	2,821,784
NORTH and CENTRAL AMERICA			
Canada	175,000	178,000*	178,000*
Mexico	13,360	13,585	16,981
U.S. and Territories	1,287,000	1,374,000	1,542,000
Total	1,475,360	1,565,585	1,736,981
SOUTH AMERICA			
Argentina	2,323	2,323*	2,323*
Brazil	3,500*	3,500*	3,500*
Chile	227,399	251,200	251,200*
Ecuador		18	18*
Peru	29,323	30,000	30,000
Total	262,545	287,041	287,041
ASIA			
Burma	24	24	24
India	64,049	67,501	70,990
Japan and Ryukyus	513,000	560,000	570,000
Philippines	0	6,000	10,000
Taiwan	16,356	15,314	16,035
Turkey	943	1,260	1,260*
Total	594,372	650,099	668,309
AFRICA			
Egypt	18,600	21,700	22,000*
Union of South Africa	400	400	9,000
Total	19,000	22,100	31,000
OCEANIA			
Australia	15,204	14,910	14,700
New Zealand	2,438	2,438	2,438
Total	17,642	17,348	17,138
WORLD TOTAL	4,893,778	5,232,710	5.562,253

[1] 1952/3 Actual data
1953/4 Preliminary Estimates
1954/5 Forecasts

[3] Calendar years 1953 and 1954

INTRODUCTION

This Review is based on data received from Governments up to 13 September 1954. As in previous years its purpose is to record and analyse the production and consumption of fertilizers in the world and in the different continents and countries. Data are presented for the three years ending on 30 June in 1953, 1954 and 1955. Final data are given for the year 1952/3. For 1953/4 most of the returns were made before the end of the fertilizer year and are therefore preliminary estimates. Figures for 1954/5 are forecasts, which were officially submitted for most countries producing or using considerable amounts of fertilizers. For the other countries unofficial forecast have been made by the compilers[1] of this Review.

This Review is again primarily an objective treatment of the data provided by Governments and of the unofficial estimates which have been made to fill up gaps in the figures. Government returns do not usually include much information on which to base a discussion of the causes underlying the changes and trends revealed by an examination of the data, therefore discussion has been kept to a minimum. Official information has been supplemented by whatever other authoritative information was available, but conclusions must be considered as being tentative. The Review concludes with a section dealing with future prospects in the production and use of fertilizers. With the aid of data from previous FAO publications, suggestions are made as to the nature of future production and consumption trends. Some remarks are also made on future possibilities of expanding fertilizer usage both in the highly-developed and in the less-developed countries. The suggestions made in this last section of the Review are based on the considered opinions of the compilers and should not be regarded as necessarily repre-

senting the opinions of countries which have supplied data.

These Reviews deal only with commercial fertilizers which supply any or all of the three plant nutrients: nitrogen, phosphoric acid and potash. The expression "all fertilizers" used here refers only to commercial materials containing these nutrients. Materials only supplying other essential plant nutrients are outside the scope of this Review, as are bulky organic manures and other farm wastes although they may contain the three major nutrients.

Notes on signs, abbreviations and conventions

In the Appendix tables at the end of this Review (and in some of the text tables) figures which have not been officially supplied by Governments (or calculated from them), but which are the compilers' unofficial estimates, are indicated by an asterisk (*). Such unofficial estimates are derived from reliable sources. Occasionally Governments have supplied official data for only the first one or two of the three years reviewed here; missing figures for later years have then been filled in (and indicated by an asterisk) using as a conservative basis the last figure officially supplied by the Government except where clear qualitative indications of probable changes have been received.

TMT In the text quantities of fertilizers are usually stated as thousands of metric tons, abbreviated to **TMT.** Tonnages given refer to the nutrients N, P_2O_5 and K_2O and not to tonnages of actual commercial fertilizer except where otherwise stated.

Percentages are usually given to two significant figures and often they are rounded to the nearest whole number where the data do not warrant greater accuracy. In the text tables totals of production or consumption sometimes do not check exactly with the data given in the body of the table, due to rounding of figures for final presentation.

Phosphate fertilizers. In the text of this Review the expression "phosphate fertilizers" is used to include all

NITROGEN CONSUMPTION: In years ending 30 June 1953, 1954 and 1955[1]

Metric tons of Nitrogen (N)

	1952/53	1953/54	1954/55
EUROPE			
Austria	23,698	28,000	30,000
Belgium	83,501	93,890	90,000
Czechoslovakia[4]	40,000*	40,000*	40,000*
Denmark	80,903	80,600	80,000
Finland	25,919	33,000	40,000
France	268,100	304,300	320,000
Germany Fed. Rep.	419,000	440,000	460,000
Germany Soviet Zone[4]	196,000*	200,000*	200,000*
Greece	28,083	36,000	50,000
Hungary[4]	1,400*	1,400*	1,400*
Iceland	3,510	4,000	4,500
Ireland	9,291	9,925	10,000
Italy	181,346	203,000	220,000
Luxembourg	3,615	6,691	3,800
Malta	170	160	140
Netherlands	159,100	165,000	165,000
Norway	36,009	35,500	36,500
Poland[4]	75,000*	75,000*	75,000*
Portugal[2]	34,464	34,464*	34,464*
Spain	113,000	122,000	122,000*
Sweden	71,548	74,478	76,000
Switzerland	11,000	10,000	10,000
United Kingdom	233,800	250,000	255,000
Yugoslavia[2]	9,651	9,651*	9,651
Total	2,108,108	2,254,059	2,333,455
NORTH and CENTRAL AMERICA			
British West Indies			
Barbados	1,967	1,900	1,900*
Dominica	84	55	52
Grenada	91	105	120
Jamaica	3,750	3,376	4,095
St. Lucia	123	129	129*
St. Vincent	191	106	100*
Trinidad and Tobago	2,003	2,218	2,200*
British Honduras	2	2*	2*
Canada	37,400	36,300*	36,300*
Costa Rica[5]	600*	600*	600*
Cuba	27,000*	27,000*	27,000*
Dominican Republic	1,816	1,800*	1,800*
Guadeloupe	1,202	1,400*	1,600*
Haiti	8	18	18*
Honduras	700	700*	700*
Martinique	2,308	2,537	2,700
Mexico	16,435	23,647	29,558
Netherlands Antilles	40	40	40*
Panama	500	500*	500*
US and Territories	1,636,000	1,738,000	1,905,000
Total	1,732,220	1,840,433	2,014,414
SOUTH AMERICA			
Argentina	10,323	10,323*	10,323*
Brazil	13,000*	13,000*	13,000*
British Guiana[2]	2,357	2,940	3,100
Chile	13,932	13,845	13,845*
Columbia	3,557	4,212	4,500*
Ecuador	200*	905	900*
Peru	33,625	35,429	35,429
Surinam	26	28	30
Uruguay	500*	500*	500*
Venezuela	1,500*	1,500*	1,500*
Total	79,020	82,642	83,127

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5 FERTILIZER MATERIALS FOR HIGH ANALYSIS MIXTURES

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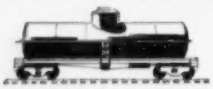
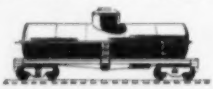


Phillips *66* Agricultural Ammonia contains 82% nitrogen. It's a convenient, economical source of nitrogen for formulation. Tank car shipments are assured to Phillips contract customers by Phillips huge production facilities in the Texas Panhandle and at Adams Terminal near Houston, Texas.

3 NITROGEN SOLUTIONS



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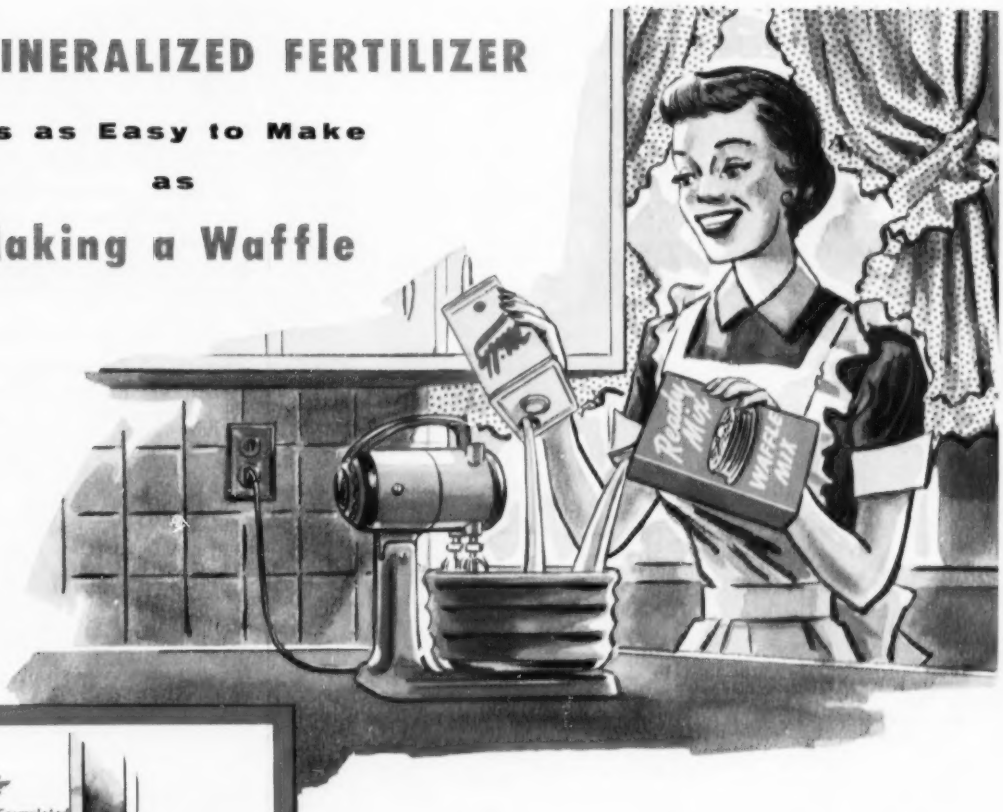

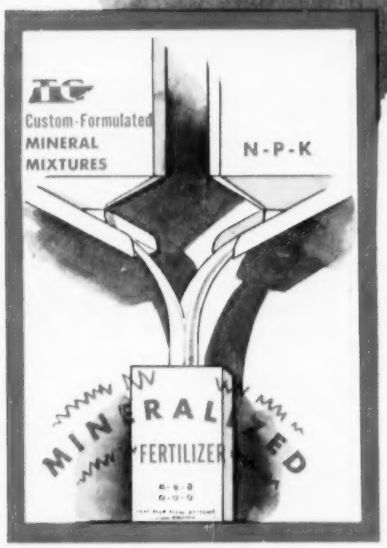

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NITROGEN CONSUMPTION (Continued)

	1952/53	1953/54	1954/55
ASIA			
Burma	164	386	24
Cambodia	200	200*	200*
Ceylon	13,555	14,368	14,368*
Cyprus	2,082	2,287	2,400*
India	104,842	80,603	80,790
Indonesia	16,902	18,932	18,932*
Iraq	1	70*	70*
Israel[5]	7,400*	10,000*	10,000*
Japan and Ryukyus	403,000	455,000	451,000
Jordan	372	38	38*
Korea (South)	125,931	98,490	103,700
Lebanon	3,335	3,335*	3,335*
Malaya	4,022	4,720	4,620
Nepal	0	22	52
Netherlands New Guinea	1	1	1
N. Borneo	19	19*	19*
Pakistan	5,266	10,343	12,225
Philippines	26,730	28,690	35,000
Sarawak	22*	22*	22*
Syria	1,554	2,140	2,500
Taiwan	71,300	75,300	84,500
Thailand	1,807	2,429	2,500
Turkey	9,450	9,487	9,487*
Viet-Nam	1,298	1,428	1,428*
Total	799,253	818,310	837,211
AFRICA			
Algeria	4,890	8,080	8,000
A/E Sudan	4,037	3,950	4,298
Belgian Congo	230*	230*	230*
British Africa			
Bechuanaland	1	1	1
Gold Coast	13	53	39
Kenya	567	965	965*
Nigeria[2]	1,854	1,267	1,500*
Nyassaland	796	777	1,200
N. Rhodesia[3]	430	492	500
S. Rhodesia[5]	2,000*	2,000*	2,000*
Tanganyika	250	300	300
Uganda	107	278	305
Zanzibar	1	1	1
Egypt	103,929	111,070	111,000*
French Cameroons	380	380*	380
French Equatorial Africa	1	1*	1*
French W. Africa	800	800*	800*
Liberia	2	3	3*
Libya	120*	120*	120*
Madagascar	472	470*	470*
Mauritius	6,050	6,150	6,150
Morocco	2,400	2,500	2,500*
Reunion	2,170	2,190	2,200
Tunisia	487	487*	487*
Union of South Africa	11,930	12,900	13,000
Total	143,975	155,523	156,508
OCEANIA			
Australia	16,338	17,489	27,500
Fiji	840	840	840
New Zealand	3,526	3,582	3,688
Total	20,704	21,911	32,028
WORLD TOTAL	4,883,280	5,172,878	5,456,743

[1] 1952/3 Actual data.
1953/4 Preliminary estimates.
1954/5 Forecasts.
[2] Calendar years 1953, 1954.
[3] Years ending 31 March.

processed fertilizers containing phosphoric acid (P_2O_5) and **excludes** natural rock phosphate, whether ground or not. (The production of rock phosphate and the direct use of the finely ground material are dealt with in separate sections).

"Fertilizer Year." Unless otherwise stated, all data refer to the "fertilizer year" from 1 July to 30 June. For example, 1952/3 means the 12 months ended on 30 June 1953.

Note on text tables

(a) In **all tables,** unless otherwise stated, data for production and consumption in 1952/3 are **actual** figures; for 1953/4 the figures are **estimates,** and for 1954/5 they are **forecasts.**

(b) Except where otherwise stated, data for the **USSR** have been **excluded** from all figures of total consumption and production in **Europe.** Similarly, all data for **Asia** exclude the **USSR,** the mainland of **China and North Korea.**

(c) All data for total production and consumption in **South America** are **approximate.**

SUMMARY AND CONCLUSIONS

The increase in world production and consumption of fertilizers has been maintained during the period from 1951/2 to 1954/5 which is reviewed here. After very rapid expansion in the years immediately following the 1939-45 War, increases in production have been relatively steady during the last few years apart from the disturbance to supplies caused by the sulphur shortage.

Countries which use fertilizers heavily have continued to increase production and consumption. Many other countries which have used little fertilizer in the past have begun to expand consumption and some are now establishing new industries to produce the fertilizers needed.

Combined world production of nitrogen (N), phosphoric acid (P_2O_5) and potash (K_2O) in 1952/3 was 16,-

268 thousands of metric tons (TMT) an increase of 5.9 per cent over 1951/2 as compared with the preliminary estimate of 6.7 per cent given in the 1953 Review. Correspondingly **World consumption of all fertilizers** in 1952/3 was 8.9 per cent greater than in 1951/2, which is close to the estimated increase for this period (8.1 per cent) given in last year's Review.

The **forecasts** now made for 1954/55 predict increases over 1953/54 in production and consumption of all fertilizers ($N + P_2O_5 + K_2O$) amounting to 4.5 per cent and 4.9 per cent respectively.

If the 1954/55 forecasts are achieved production and consumption of all fertilizers will have increased by **17.6 per cent** and **21.1 per cent** respectively in the three years from mid-1952.

Nitrogen again showed the largest and most consistent increases in world production and consumption over that period. The corresponding **percentage increases** for **potash** are somewhat lower. Although production and consumption of **phosphoric acid** has now recovered from the setback caused by the world shortage of sulphur, rates of increase in production and consumption have been less than those for nitrogen and potash. While the existing pattern of World fertilizer usage is maintained, **production and consumption** of **N** and **K_2O** are likely to **increase more rapidly** than **production and consumption** of **P_2O_5**. In a few years the World may produce and use approximately equal tonnages of N, P_2O_5 and K_2O. The following are percentage increases in world production and consumption of each kind of fertilizer over the last four years.

HOW TO GET COMPLETE REPORT

This material is extracted from "An Annual Review of World Production and Consumption of Fertilizers—1954," published by the Food and Agriculture Organization of the United Nations. The full report may be obtained by writing FOA headquarters at Viale delle Terme di Caracalla, Rome, Italy.

January, 1955

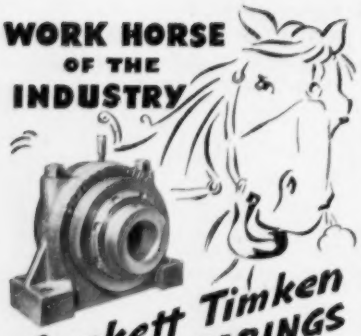
PHOSPHORIC ACID PRODUCTION:[a]
In years ending 30 June 1953, 1954 and 1955[1]
Metric tons of Phosphoric acid (P_2O_5)

	1952/53	1953/54	1954/55
EUROPE			
Austria		4,032	4,032*
Belgium	211,666	241,117	244,500
Czechoslovakia	56,000*	56,000*	56,000*
Denmark	77,878	81,720	81,720*
Finland	50,563	55,835	59,000
France	422,600	526,500	560,000
Germany Fed. Rep.	404,800	435,000	475,000
Germany South Zone	26,000*	26,000*	26,000*
Greece	16,928	27,500	58,000
Hungary	4,000*	4,000*	4,000*
Ireland	29,206	29,000	29,000
Italy	364,590	369,000	370,000
Luxemburg	91,040	88,000	88,000
Netherlands	115,500	134,500	140,000
Norway	20,457	28,000	34,750
Poland	50,000*	50,000*	50,000*
Portugal[2]	71,366	71,366*	71,366*
Spain	208,000	216,000	216,000*
Sweden	103,832	104,800	107,000
Switzerland	7,000	7,000	7,000
United Kingdom	326,900	351,700	366,000
Yugoslavia[2]	9,960	9,960*	9,960*
Total	2,668,286	2,917,030	3,057,328
NORTH and CENTRAL AMERICA			
British West Indies			
Jamaica	135	138	138*
Canada	107,000	120,000*	120,000*
Cuba	6,000*	6,000*	6,000*
Mexico	12,695	14,607	18,259
US and Territories	2,193,000	2,105,000	2,177,000
Total	2,318,830	2,245,745	2,321,397
SOUTH AMERICA			
Argentina	4,822	4,822*	4,822*
Brazil	13,500*	13,500*	13,500*
Chile	15,810	16,000*	16,000*
Ecuador	60*	153	200*
Peru	24,436	25,000	25,000
Uruguay	1,000*	1,000*	1,000*
Total	59,628	60,475	60,522
ASIA			
Burma	120	120	150
India	15,683	16,430	19,920
Israel[3]	8,712*	20,000*	20,000*
Japan and Ryukyus	252,000	321,000	325,000
Korea (South)	915	915*	915*
Taiwan	14,973	17,295	17,100
Turkey	3,532	14,400	14,400*
Total	295,935	390,160	397,485
AFRICA			
Algeria	12,784	20,320	19,500
British Africa			
Kenya	786	915	915*
Egypt	12,942	10,950	11,000*
Morocco	14,630	17,100	17,100*
Tunisia	13,000	13,000*	13,000*
Union of S. Africa	104,000	112,400	112,400
Total	158,142	174,685	173,915
OCEANIA			
Australia	353,540	398,200	407,000
New Zealand	127,369	148,262	172,062
Total	480,909	546,462	579,062
WORLD TOTAL	5,981,730	6,334,557	6,589,709

[a] Supplied by superphosphate, basic slag and other forms of phosphate but **excluding** ground rock phosphate prepared for direct application without processing.

[1] 1952/3 Actual date;
1953/4 Preliminary estimates;
1954/5 Forecasts

[2] Calendar years 1953, 1954



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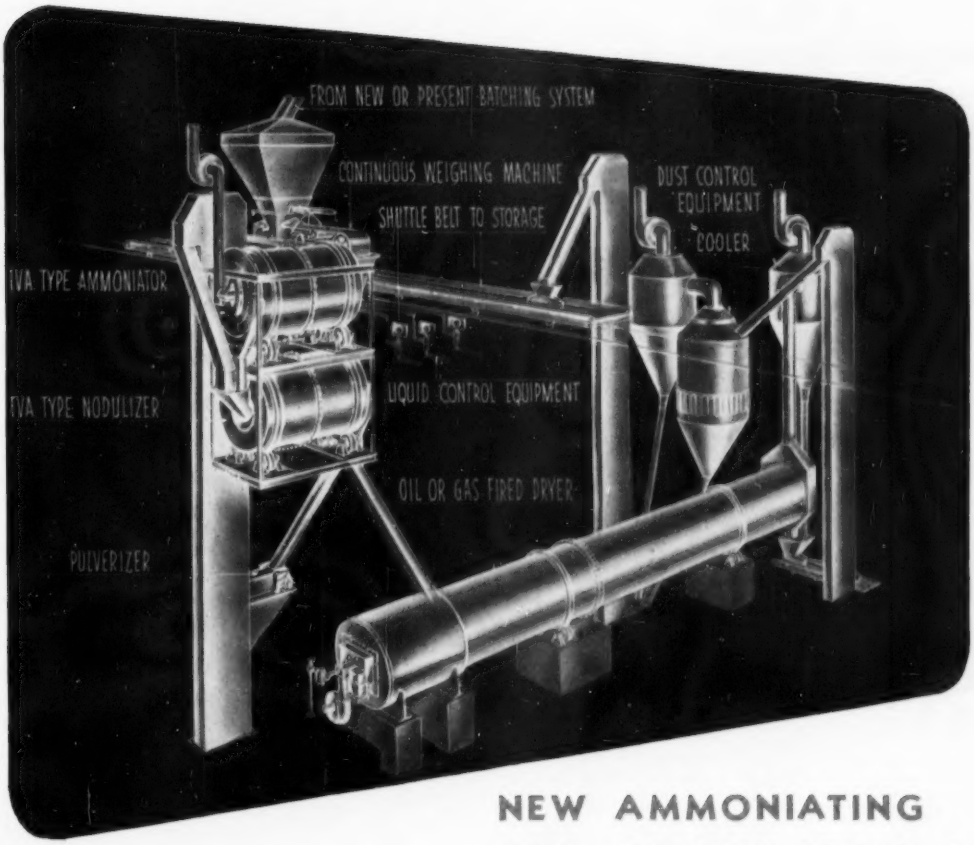
PHOSPHORIC ACID CONSUMPTION:
In years ending 30 June 1953, 1954 and 1955[1]
(Excluding ground rock phosphate)
Metric tons of phosphoric acid (P_2O_5)

	1952/53	1953/54	1954/55
EUROPE			
Austria	26,520	44,000	48,000
Belgium	84,249	87,624	88,500
Czechoslovakia	60,000*	60,000*	60,000*
Denmark	95,515	97,500	98,000
Finland	63,843	69,335	69,000
France	451,400	535,000	550,000
Germany (Federal Republic)	393,800	450,000	500,000
Germany (Soviet Zone)	66,000*	66,000*	66,000*
Greece	23,056	31,600	50,000
Hungary	11,000*	11,000*	11,000*
Iceland	1,700	2,050	2,200
Ireland	40 802	45,000	45,000
Italy	338,680	340,000	350,000
Luxembourg	5,197	5,818	5,600
Netherlands	115,000	112,000	115,000
Norway	37,918	38,000	39,000
Poland	60,000*	60,000*	60,000*
Portugal[2]	69,923	69,923*	69,923*
Spain	206,160	214,800	214,800
Sweden	103,550	103,460	104,500
Switzerland	29,500	32,000	31,000
United Kingdom	363,000	384,000	393,000
Yugoslavia	9,960	9,960*	9,960*
Total	2,657,793	2,909,070	2,990,483
NORTH and CENTRAL AMERICA			
British West Indies			
Dominica	99	53	53
Grenada	79	113	125
Jamaica	375	232	381
St. Lucia	34	120	120*
St. Vincent	47	78	80*
Trinidad and Tobago	352	378	380*
British Honduras	16	16*	16*
Canada	113,600	109,200*	109,200*
Costa Rica[4]			
Cuba	29,000*	29,000*	29,000*
Dominican Republic	1,236	1,200*	1,200*
Guadeloupe	959	1,000*	1,200*
Haiti	6	15	15*
Honduras	700	700*	700*
Martinique	1,356	1,464	1,500
Mexico	14,295	18,807	23,509
Netherlands Antilles	40	40	40*
Panama	200	200*	200*
U.S. and Territories	2,163,000	2,082,000	2,154,000
Total	2,325,394	2,244,616	2,321,719
SOUTH AMERICA			
Argentina	4,822	4,822*	4,822*
Brazil	33,000*	33,000*	33,000*
British Guiana[2]	235	416	450
Chile	29,835	30,000	30,000
Colombia	9,781	11,583	13,000*
Ecuador	161*	1,014	1,000*
Peru	24,527	25,220	25,220
Surinam	16	18	20
Uruguay	1,500*	1,500*	1,500*
Venezuela	600*	600*	600*
Total	104,477	108,173	109,612
ASIA			
Burma	192	475	425
Cambodia	200	200*	200*
Ceylon	2,362	2,504	2,504*
Cyprus	4,794	5,508	6,000*



NEW AMMONIATING AND GRANULATING PROCESS

This new TVA Sackett-Built continuous process produces high-analysis granular mixed fertilizers from lower cost raw materials. The finished product need be stored only 48 hours before packaging. Eliminates "caking" in the bag. This process is presently being offered in 10, 15 and 20 tons per hour capacities. Can be incorporated into new or existing buildings. We also do the required engineering, installation and supervision of initial production if owner desires.

Superphosphate and mixed goods producers are invited to get our seasoned counsel on their expansion and modernization programs. It is available at no cost.

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PHOSPHORIC ACID CONSUMPTION (Continued)

	1952/53	1953/54	1954/55
India	19,937	16,604	19,920
Indonesia	7,050	9,700	9,700*
Iraq	2	6*	6*
Israel[4]	9,192*	20,000*	20,000*
Japan and Ryukius	247,000	313,000	315,000
Jordan	95	47	47*
Korea (South)	966	28,000	48,000
Lebanon	833	833*	833*
Malaya	154	151	133
Nepal	0	0	1
Netherlands New Guinea	1	2	2
N. Borneo	44	44*	44*
Pakistan	156	234	390
Philippines	16,446	18,650	25,000
Syria	481	668	700
Taiwan	24,800	24,500	28,800
Thailand	1,397	1,705	2,000
Turkey	4,986	14,400	14,400
Viet Nam	3,505	3,505	3,505*
Total	344,593	460,736	497,610
AFRICA			
Algeria	15,128	24,200	23,200
A/E Sudan	33	39	75
British Africa:			
Bechuanaland	34	42	45
Gold Coast	15	36	26
Kenya	6,084	5,026	5,025*
Nigeria[2]	540	816	900*
Nyassaland	265	259	400
N. Rhodesia[3]	1,250	1,337	1,524
S. Rhodesia			
Tanganyika	120	140	200
Uganda	18	0	18*
Zanzibar	1	1	1
Egypt	16,479	12,450	12,000*
French Cameroons	200	200*	200*
French Equatorial Africa	1	1*	1*
French West Africa	800	800*	800*
Liberia	3	5	5*
Madagascar	236	240*	240*
Mauritius	40	40	40
Morocco	14,498	17,500*	17,500*
Reunion	1,130	740	1,500
Swaziland	238	238*	238*
Tunisia	12,673	12,673*	12,673*
Union of South Africa	99,880	109,900	109,900
Total	169,666	186,683	186,512
OCEANIA			
Australia	353,250	397,914	406,670
Fiji	250	260	260
New Zealand	136,434	161,552	186,062
Total	489,934	559,726	592,992
WORLD TOTAL	6,091,857	6,469,004	6,698,928

[1] 1952/3 Actual data
1953/4 Preliminary estimates
1954/5 Forecast
[2] Calendar years 1953, 1954
[3] Years ending 31 March

NFA Report

(Continued from page 18)

a relatively low tonnage of fertilizer, was used on lawns, gardens, golf courses and the like. However, last year some half-million tons of fertilizer may have been used for non-farm purposes. This area of use is apt to expand at a quickened pace in the years ahead as home owners become increasingly aware of the benefits of using fertilizer on the lawn and in the garden.

Regionally, the pattern of fertilizer use continued its upward spiral in the west North Central States, (Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota and South Dakota) and the 11 Western States (the Rocky Mountain and Pacific Coast states). In other sections of the country, fertilizer consumption ranged from stable to slightly off. Low farm prices and crop controls are among the causes for the declines recorded.

Topping the list of states in fertilizer consumption is North Carolina with 1,815,572 tons. A year earlier, North Carolina farmers used 1,849,863 tons.

Next in order comes Georgia, 1,361,254 tons—Florida, 1,269,442 tons—Indiana, 1,100,00 tons—Ohio, 1,075,000 tons and Alabama, 1,074,893 tons. All the remaining states each reported consumption of less than a million tons.

NFA Shows New Movie On Soil Sampling

A newly completed educational movie on soil sampling was unveiled to the public for the first time December 10 by NFA in a preview showing at the Statler Hotel here. About 200 key officials of government, industry and the Land-Grant Colleges attended the showing.

Title of the new sound-color moving picture is "The Big Test." It was produced by NFA's Robert H. Engle, and uses a dramatic plot with professional actors to tell its story.

Also included in the evening's program was a showing of a new public service television short subject based on material included in the new NFA book—"The Care and Feeding of Garden Plants."

NFA Garden Book An Exceptional Work

We exposed the new NFA book to several types of gardeners, ranging from rank amateurs to those who call the varieties of camellia by their proper latin names. All were enthusiastic, and even the advanced amateurs were surprised how much they learned that they had not known before about the principles on which they work in nuturing temperamental flora.

This book "The Care and Feeding of Garden Plants," really goes down to the roots of the subject, with a primer-type treatment of how and why plants grow, and what climate, weather, soil and plant food have to do with it. With this foundation established, the book goes into lawns, shrubs, trees, house plants, garden flowers, vegetables and fruits, and gives each a full treatment.

14 distinguished authors contributed, and the book is replete with illustrations that clearly illuminate the subject, 37 pages of them in full color, in a 300 page volume.

The book, published jointly by NFA and American Society for Horticultural Science can be had from NFA for $3 a copy.

Oklahoma A&M Publishes Fertilizer Calculation Booklets

A series of new publications by Oklahoma A&M, broadly entitled "Fertilization Calculations Made Easy," each including a calculation graph and explanation by Professor James Garton on how to use it.

Number and name of each publication are as follows: MP 35, calculation of pounds of fertilizer per acre for different concentrations; MP 36, calculation of comparative cost per unit of nutrient element from different fertiliers; MP 37, calculation of amount of fertilizer per cow, for gardens.

MP 38, calculation of amount of fertilizer for lawns; MP 39, calculation of amount of nitrogen fertilizer for trees; MP 40, calibration chart for 10 ft. fertilizer spreader, and MP 41, calculation of fertilizer application by sprinkler irrigation.

POTASH: Production in years ending 30 June 1953, 1954 and 1955[1]
Metric tons of potash (K_2O)

	1952/53	1953/54	1954/55
EUROPE[2]			
France	897,600	952,000	975,000
Germany (Fed. Rep.)	1,299,100	1,400,000	1,450,000
Germany (Soviet Zone)	1,500,000*	1,500,000*	1,500,000*
Italy	2,398	2,500	2,500
Netherlands	600	1,000	1,000
Spain	166,480	183,640	183,640*
Sweden	476	800	800
Total	3,866,654	4,039,940	4,112,940
NORTH and CENTRAL AMERICA			
U.S. and Territories	1,483,000	1,597,000	1,724,000
Total	1,483,000	1,597,000	1,724,000
SOUTH AMERICA			
Chile	344	350*	350*
Ecuador		29	30*
Peru	2,243	2,500	2,500
Total	2,587	2,879	2,880
ASIA			
India	440	440	440
Israel[3]	400,000*	80,000*	80,000*
Total	40,440	80,440	80,440
WORLD TOTAL	5,392,681	5,720,259	5,920,260

[1] 1952/3 Actual data.
1953/4 Preliminary estimates.
1954/5 Forecasts.

[2] Production of potassium sulphate reported by Belgium has been excluded because this material is made from imported muriate of potash. Since this production was reported for 1953 and included in the 1953 Review European potash production appears to have fallen.

POTASH CONSUMPTION in years ending 30 June 1953, 1954 and 1955[1]
Metric tons of potash (K_2O)

	1952/53	1953/54	1954/55
EUROPE			
Austria	27,966	38,000	42,000
Belgium	132,476	136,102	138,000
Denmark	153,415	156,000	156,000
Finland	47,074	50,000	50,000
France	370,600	476,000	500,000
Germany (Federal Republic)	770,800	790,000	820,000
Germany (Soviet Zone)	400,000*	400,000*	400,000*
Greece	3,336	3,300	5,000
Iceland	1,340	1,600	1,800
Ireland	24,181	27,500	27,500
Italy	34,856	38,000	43,000
Luxembourg	4,760	4,961	5,000
Netherlands	157,900	165,000	165,000
Norway	47,567	47,600	48,000
Portugal[2]	3,052	3,052*	3,052*
Spain	46,480	58,640	58,640*
Sweden	67,818	69,300	69,300
Switzerland	19,000	19,000	19,000
United Kingdom	235,000	244,000	250,000
Yugoslavia[2]	4,583	4,583*	4,583*
Eastern Europe	310,000*	310,000*	310,000*
Total	2,862,204	3,042,638	3,115,875
NORTH and CENTRAL AMERICA			
British West Indies			
Barbados	1,229	2,680*	2,680*
Dominica	84	50	45

POTASH CONSUMPTION (Continued)

Grenada	99	128	130
Jamaica	1,800	1,900	2,300
St. Lucia	36	105	105*
St. Vincent	108	167	170*
Trinidad and Tobago	929	1,238	1,300*
British Honduras	3*	3*	3*
Canada	71,000	68,800*	68,800*
Costa Rica[4]			
Cuba	20,000*	20,000*	20,000*
Dominican Republic	670*	670*	670*
Guadeloupe	1,410	1,600*	1,800*
Haiti	10	21	21*
Honduras	700	700*	700*
Martinique	2,927	3,256	3,400
Mexico	2,388	5,179	6,474
Netherlands Antilles	40	40	40*
Panama	200	200*	200*
U.S. and Territories	1,578,000	1,661,000	1,779,000
Total	1,681,633	1,767,737	1,887,838
SOUTH AMERICA			
Argentina	1,600*	1,600*	1,600*
Brazil	16,000*	16,000*	16,000*
British Guiana[2]	50	57	60
Chile	3,542	4,000*	4,000*
Columbia	8,003	9,477	10,000*
Ecuador	20*	479	500*
Peru	2,379	2,680	2,680
Surinam	6	8	8
Venezuela	1,000*	1,000*	1,000*
Total	32,600	35,301	35,848
ASIA			
Burma	30	0	0
Cambodia	200	200*	200*
Ceylon	9,175	9,725	9,725*
Cyprus	27	75	100*
India	2,980	5,605	7,440
Indonesia	386	700	700*
Israel[4]	3,000	4,000	4,000*
Japan and Ryukyus	210,000	210,000	313,000
Korea (South)	6,974	2,400	7,200
Lebanon	1,575	1,575*	1,575*
Malaya	812	594	694
Nepal	0	0	1
Netherlands New Guinea	1	2	2
N. Borneo	56	56*	56*
Philippines	5,027	5,840	8,000
Syria	135	222	250
Taiwan	14,100	13,300	19,300
Thailand	36	60	70
Turkey	2,471	2,400	2,400*
Viet-Nam	48	48	48*
Total	257,033	256,802	374,761
AFRICA			
Algeria	9,050	10,100	12,000
A/E Sudan	10	0	0
British Africa			
Gold Coast	1	2	2
Kenya	61	141	141*
Nigeria[2]	250	126	200*
Nyassaland	265	259	400
N. Rhodesia[3]	586	661	753
S. Rhodesia[4]			
Tanganyika	80	80	105
Uganda	18	34	34*
Egypt	144	192	200*
French Cameroons	240	240*	240*
French Eq. Africa	2	2*	2*
French West Africa	2,370	2,370*	2,370*
Liberia	1	3	3*
Madagascar	274	270*	270*
Mauritius	2,800	2,900	2,900
Morocco	4,400	4,400*	4,400*
Reunion	1,190	1,050	2,000
Swaziland	52	52*	52*
Tunisia	213	213*	213*
Union of S. Africa	8,620	11,800	12,000
Total	30,627	34,895	38,285
OCEANIA			
Australia	8,625	16,176	16,176*
New Zealand	10,804	11,760	13,000
Total	19,429	27,936	29,176
WORLD TOTAL	4,883,526	5,165,309	5,481,783

[1] 1952/3 Actual data
1953/4 Preliminary Estimates
1954/5 Forecasts

[2] Years ending 31st December 1953, 1954 and 1955

[3] Years ending 31st March 1953, 1954 and 1955

These publications can be ordered direct from the college. Address Oklahoma A&M Mailing Room, Gardiner Hall, Stillwater, Oklahoma.

Oklahoma PFA Sponsors Meetings

Dealer meetings were held at two Oklahoma points last month by the Oklahoma Plant Food Association, the theme being "How Can Dealers Help in Effective Use of Fertilizers."

The annual Crops and Soils Conference at Oklahoma A&M, Stillwater, has been set for February 10-11. Prior to that the OPFA will hold its quarterly meeting February 9 at the Student Union.

Dales Campbell, Oklahoma Fertilizer & Chemical Company has been elected treasurer, replacing Arnold Neumann who has moved to Texas. John R. Taylor, Grand River Chemical, and Perry Onstott, Davison Chemical, are newly elected board members.

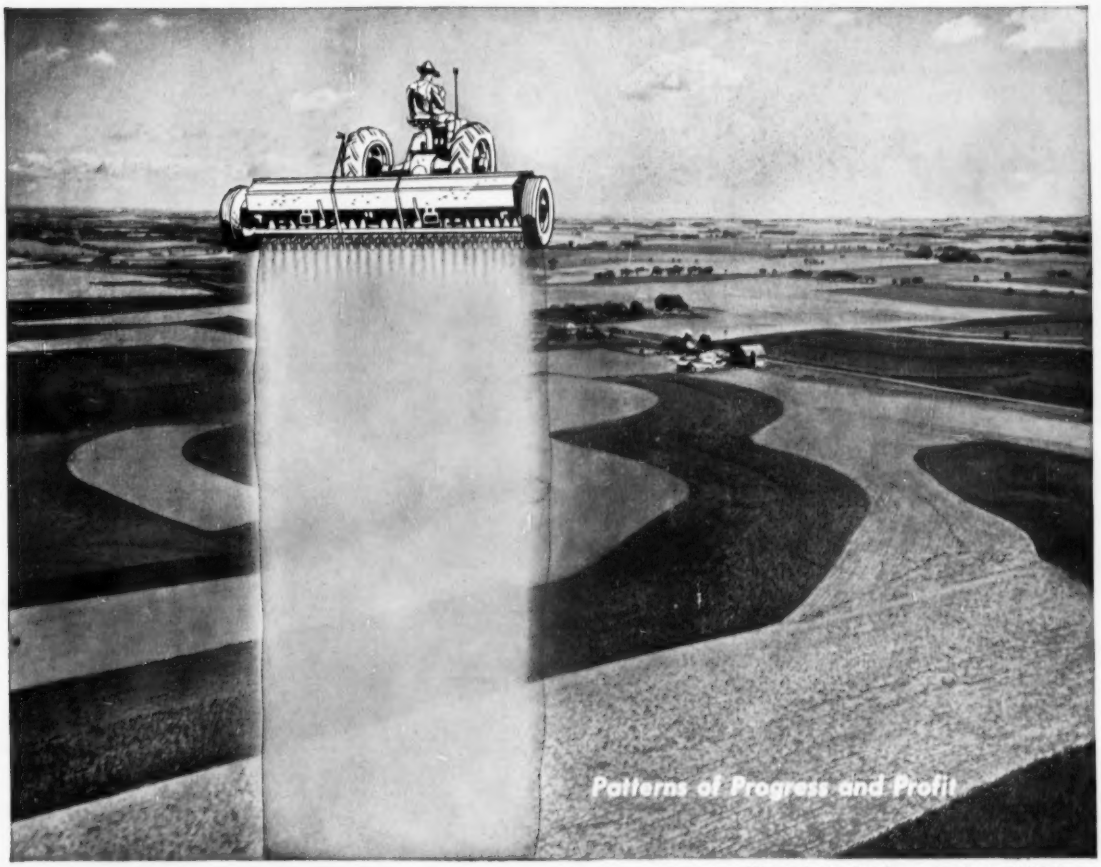
Sulphur Industry At Record Capacity

The U. S. Sulphur industry broke all past production records in 1954 and begins the new year with the greatest productive capacity in its history.

Production of sulphur from all sources in 1954 reached an estimated 6,600,000 long tons, 350,000 tons more than in 1953, according to Langbourne M. Williams, president of Freeport Sulphur Company. Most of this production came from 13 salt dome deposits in Louisiana and Texas mined by the Frasch hot-water process.

Rich Phosphate In Isreal

Phosphate deposits, richer by 4% have been found in the Arava region of Isreal, by Mahtsavei Isreal Ltd.



(Photo—Courtesy Soil Conservation Service, U.S.D.A.)

High Grade Muriate of Potash

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Left: Earle J. Shaw (left) presenting "Man-of-the-Year" Award to Millard E. McCollam, chairman of the California Fertilizer Association's Soil Improvement Committee and western states manager, American Potash Institute, San Jose, Calif. **Upper Right:** Paul T. Truitt, APFC president, Washington; Beverly H. Jones, CFA president, Fresno; W. R. Allstetter, NFA vice president, Washington; Jesse W. Tapp, vice chairman of the board, Bank of America, Los Angeles; Francis R. Wilcox, treasurer and assistant manager, Sunkist Growers, Los Angeles. **Lower Right:** 1955 Officers and Directors of CFA are Wm. E. Snyder, vice president, Los Angeles; Sidney H. Bierly, executive secretary and manager, San Marino; James M. Quinn, director, Los Angeles; Murray C. McNeil, director, Hayward; Beverly H. Jones, president, Fresno; Howard G. Conley, director, Los Angeles; Virgil A. Frizzell, secretary, Salinas; Howard H. Hawkins, director, Glendora; Jack Baker, treasurer, Los Angeles; W. L. Dixon, Jr., director, Oakland.

ALABAMA SOCIETY FORMED

A new state organization came into being December 9 at Auburn, Ala., when some 150 representatives of the fertilizer industry — manufacturers, distributors, dealers, users, and others interested in proper fertilization—voted to form the Alabama Soil Fertility Society.

Frank Boyd, agronomist for Virginia-Carolina Chemical Corp. at Montgomery who had headed a committee to investigate the need and desirability of forming such a group, was named president of the new society. Bill Nichols of Sylacauga Fertilizer Co., Sylacauga, and J. F. Nettles of Superior Fertilizer Co., Peterman—both of whom had served on the steering committee — were elected vice presidents. Charles Summerour, American Potash Institute, Montgomery, committee secretary, became secretary-treasurer of the new local-level educational organization.

The general purpose of the Society is to foster and promote research and education in the use of plant nutrients and other agricultural chemicals as an aid to more efficient crop production, which will in turn mean a more prosperous agriculture in the state of Alabama.

Directors of the group are, in addition to the officers: J. R. Pratt, F. S. Royster Guano Co., Montgomery; Ernest Johnston, Centrala Cooperative, Selma; M. L. Hanahan, Home Guano Co., Dothan; E. T. Spidle, Capital Fertilizer Co., Montgomery; L. E. Cooper, Roanoke Oil & Fertilizer Co., Roanoke; Warren Belser, U.S. Steel Corp. (Coal Products Div.), Birmingham; B. V. Bender, International Minerals & Chemical Corp., Florence; and J. B. Cunningham, Valley Fertilizer Co., Aliceville.

ABOVE—Officers of the new Alabama society for the coming year: Vice President J. F. Nettles, Superior Fertilizer Co., Peterman; Vice President Bill Nichols, Sylacauga Fertilizer Co., Sylacauga; Secretary-Treasurer Charles Summerour, American Potash Institute, Montgomery; and President Frank Boyd, Virginia-Carolina Chemical Corp., Montgomery. **BELOW**—Directors of the Alabama Soil Fertility Society, Inc. are, left to right: J. R. Pratt, F. S. Royster Guano Co., Montgomery; Ernest Johnston, Centrala Cooperative, Selma; J. F. Nettles, Superior Fertilizer Co., Peterman; M. L. Hanahan, Home Guano Co., Dothan; Bill Nichols, Sylacauga Fertilizer Co., Sylacauga; E. T. Spidel, Capital Fertilizer Co., Montgomery; Frank Boyd, Virginia-Carolina Chemical Corp., Montgomery; L. E. Cooper, Roanoke Oil and Fertilizer Co., Roanoke; Warren Belser, U. S. Steel Corp., Birmingham; and Charles Summerour, American Potash Institute, Montgomery. Directors not present for picture are B. V. Bender, International Minerals & Chemical Corp., Florence; and J. B. Cunningham, Valley Fertilizer Co., Aliceville.

APFC HONORS EDITORS AND ESSAYISTS

Left, above: David C. Faulkner, 14, (center) Kenton, Ohio, has been adjudged first-place national winner of $500 in the 1954 Essay Contest on "Building Fertility to Cut Farm Costs," sponsored by The National Grange and the American Plant Food Council. He is shown with Council Director of Information and Secretary Louis H. Wilson (right) who presented the award for the Council as Herschel D. Newsom (left), Master of The National Grange, looks on approvingly. The award was presented at The National Grange sessions in Spokane. Faulkner's essay was judged the best of over 15,000 essays written by boys and girls in 48 states and Hawaii. **Left, below:** Associate editors of two of the nation's foremost farm magazines were winners in the annual "Soil Builders Award for Editors" contest conducted by APFC in cooperation with the American Agricultural Editor's Association. Shown are: Delmer E. Groves, associate editor of "The Ohio Farmer," winning writer among the magazines with less than 300,000 circulation; Louis H. Wilson, director of information and secretary of the Council, who presented the awards at the AAEA meeting; and Wallace D. Inman, associate editor of "Capper's Farmer," winner among the magazines with more than 300,000 circulation.

Great Plains Ammonia Group Elects

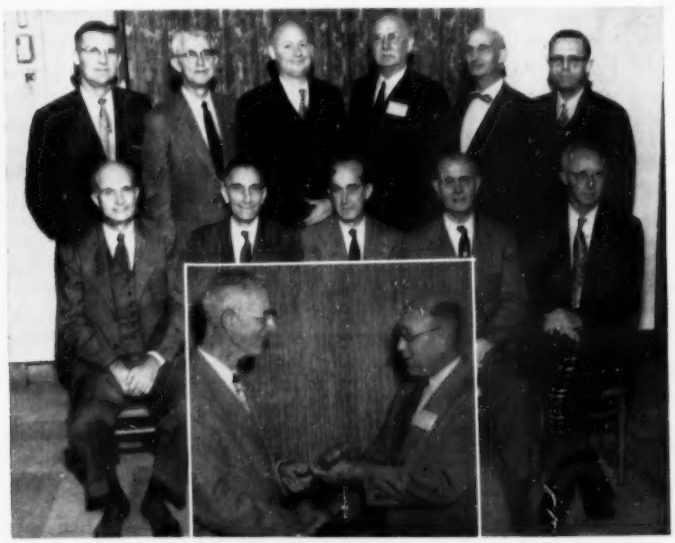
The meeting is expected to bring together a record number of groups concerned with all phases of weed control in Southern agriculture. Outstanding scientists from the Southern land-grant colleges, USDA, extension services, agricultural chemical industry, manufacturers of farm equipment and others interested in this costly farm operation are expected to attend.

Sessions on the latest developments of controlling weeds in certain agronomic crops, cotton, brush and horticultural crops are scheduled. Other topics to be discussed are: research on basic herbicidal problems, extension aspects of weed control and agricultural engineering equipment. A number of very interesting papers are expected to be given during these different sessions.

B. A. Frankl, of Mor-Gro, Inc., Algona, Iowa has been elected president of the Great Plains Agricultural Ammonia Association. Other officers are George Gigstad, Nortonville, Kan.; and Robert Jeep, Tekamah, Neb., vice-presidents; and James H. Andrew, Jefferson, secretary-treasurer.

The association is composed of more than 300 anhydrous anmonia distributors, producers and equipment manufacturers in Iowa, Missouri, Kansas, Nebraska, Colorado, Oklahoma, South Dakota, North Dakota and Minnesota.

Below: Shown here are 11 of the Twenty-four American and Canadian educators, research workers, and commercial representatives were named as fellows of the American Society of Agronomy at the organization's annual meeting at St. Paul, Minn., in November. Front row; R. G. Shands, of Wisconsin, J. B. Harrington, of Saskatchewan, R. H. Bray, of Illinois; O. T. Bonnett, of Illinois; J. R. Neller, of Florida; rear row: Orville Vogel, State College of Washington; M. A. Hein, USDA, Beltsville; F. E. Clark, USDA, Beltsville, Md.; S. D. Gray, American Potash Institute, Washington, D. C.; D. R. Dodd, Ohio State (now living at Hedgesville, W. Va.); W. B. Andrews, Mississippi State College. Also named as fellows but not shown here are: K. H. W. Klages, of Idaho; C. A. Lamb, Ohio State; N. P. Neal, of Wisconsin; T. E. Stoa, North Dakota Agricultural College; G. B. Bodman, of California; John Mitchell, of Saskatchewan; M. G. Cline, Cornell; L. A. Dean, USDA, Raleigh, N. C.; G. D. Smith, USDA, Washington; M. B. Sturgis, Louisiana State; Russell Coleman, NFA, Washington; J. R. Taylor, Grand River Chemicals Div., Tulsa; H. H. Tucker, Worthington, Ohio, formerly executive director, Coke Oven Ammonia Research Bureau. **Inset:** Two leading American Agronomists "passing the gavel," a traditional ceremony at annual ASA meetings: C. J. Willard (left), outgoing president of the Society and Ohio State University forage crop specialist, hands the gavel to the incoming president, G. G. Pohlman, head of the Department of Agronomy and Genetics, West Virginia University, Morgantown, W. Va.



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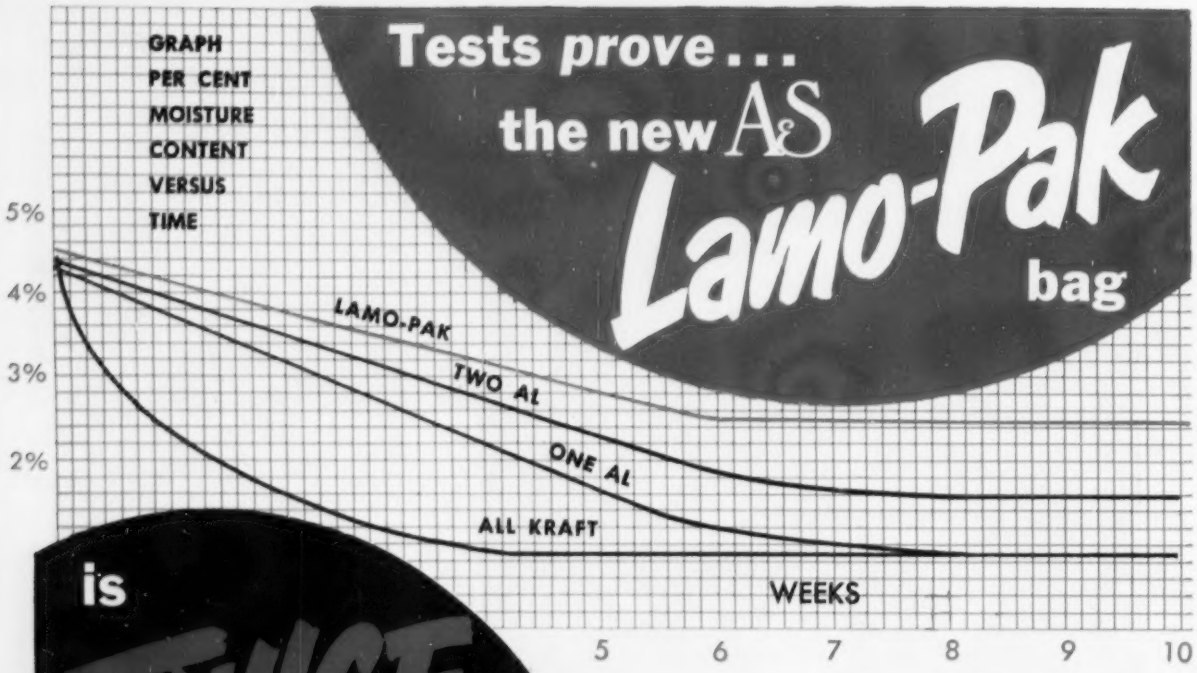

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SALES OFFICES IN ALL PRINCIPAL CITIES

Upper left: Sign in lobby guides delegates to mezzanine registration desk for Soil Conservation convention which immediately followed close of Grassland Farming meeting. **Upper right:** Registration begins for the more than 300 members who attended the meeting. **Lower left:** H. Wayne Pritchard of Des Moines, Executive Secretary of the Society; Ernest Johnson, Mott, N. D.; Orvill Godman, Dickinson, N. D.; National Councilman Adrian C. Fox, Deputy State Conservation Director for North Dakota, from Bismark, N. D. **Lower right:** More of the North Dakota group, whose tremendous membership increase in the past year has moved their state from the bottom of the list to second place: Ray Parker, New England, N. D.; Francis Bahr, Dickinson, N. D.; Ralph Smith, Watford City, N. D.; Truman Anderson, Stanley, N. D.

PATRICK ELECTED TO HEAD SOIL CONSERVATION GROUP

Austin L. Patrick of Arlington, Va., Mid-West administrator of the U. S. Soil Conservation Service, was elected president of the 6,000-member Soil Conservation Society of America, meeting in annual convention at Jacksonville, Florida. Dr. Patrick was installed by R. L. Bailey of Auburn, Ala., out-going president of the technical and scientific conservation society.

Other officers elected are Edward H. Graham of Falls Church, Va., first vice-president; Robert M. Salter of Silver Springs, Md., second vice president; Howard R. Bissland of Winter Park, Fla., treasurer; and Firman E. Bear of New Brunswick, N. J., Chester S. Wilson of St. Paul, Minn., and Elmer L. Sauer of Champaign, Ill., council members.

Highlights of the three-day session included speeches by Governor Herman Talmadge of Georgia, Don Williams, head of the U. S. Soil Conservation Service, and Richard McArdle, head of the U. S. Forest Service.

The society awarded four fellowships and six honorary memberships to men who have rendered outstanding contributions to the progress of soil and water conservation work.

Fellowships went to Frank C. Edminster, USDA Soil Conservation Service, biologist of New Brunswick, N. J.; Evan L. Flory, director of soil and moisture conservation work for the Bureau of Indian Affairs in Washington, D. C.; Glenn L. Fuller, SCS soil scientist of San Juan, Puerto Rico; and Donald A. Williams, director of SCS in Washington, D. C.

Honorary Memberships were presented William A. Benitt, farmer of Washington County, Minn.; Dr. Ira N. Gabrielson, president of the Wildlife Management Institute in Washington, D. C.; George R. Heidrich, farmer of Charles Town, West Virginia; C. E. Ramser, SCS engineer of Washington, D. C.; Congressman Ben F. Jensen of Iowa; and Arthur Clinton Spurr, power company president of Fairmont, West Virginia.

The award ceremony climaxed a five-day conservation event which included a two-day session of the national Joint Committee on Grassland Farming and a three-day meeting of the Soil Conservation Society of America.

USDA To Continue Seed Program in 1955

The U. S. Department of Agriculture has announced that the program for the purchase and distribution of limited supplies of foundation seed of improved grass and legume varieties to help increase supplies of these seeds for farmers will be continued in 1955 with a program similar to that in effect for 1954.

Since the program began in 1948, more than 500,000 pounds of stock seed of new grass and legume varieties have been purchased. The program has helped to increase the quantity of certified seeds available to farmers. This has brought quicker broad-scale use of these seeds.

In the past, 10 to 15 years have been required to get new seeds into broad use. As an example of how this has been speeded up, the production of Atlantic alfalfa was started in 1940 and had increased to about 15,000 pounds by 1948. Since 1948 when the program was started, the production has jumped to nearly 2,000,000 pounds.

All persons and agencies interested in the foundation seed program may obtain information from State Agricultural Stabilization and Conservation offices.

EXTRACTS FROM TALKS AT GRASSLANDS SYMPOSIUM

DR. GLEN W. BURTON

Principal Geneticist, Georgia Costal Plains States, USDA

A man asked to speak on this subject 100 years ago would have considered the native grasses of the Piney woods as the "Coastal Plain Grasslands." Had he been a keen observer, he would have known that these grasslands in their native state are not productive. He might have made sure that his estimate would never be surpassed by recklessly placing the beef potential of these lands at 50 pounds per acre.

Suppose a speaker forty years ago had had at his disposal the fertilizer response curve of the then-popular carpet grass. Suppose he had used it to predict potential production. The figure that he would have set would have been less than half that now possible with better grasses.

Rather than attempt to guess what the future may hold in this rapidly changing forage world, let us try to estimate the possible productivity of the best grasses that can be grown on Coastal Plain soils in 1954. For most of these soils, Coastal Bermuda grass carries the greatest yield potential.

For those who wish to see the potential of Coastal Plain grasslands planted to Coastal Bermuda expressed in pounds of beef per acre, the following calculations may be made. Over a four-year period ending in 1953, Coastal Bermuda produced an average of 696 pounds of beef per acre per year when fertilized with 200 pounds of N per acre. Without irrigation, hay yields have been increased about 50% by increasing nitrogen rates from 200 to 500 pounds per acre. Beef yields have been proportional to forage yields up to 200 pounds of N per acre in a four-year grazing study with this grass. Assuming this relationship to hold at higher fertility levels, Coastal Bermuda with 800 pounds of N per acre, plus balanced amounts of other nutrients annually, should produce 1044 pounds of beef per acre per year.

The above calculations take into consideration production during seven months from April 1 to October 31. Coastal Bermuda makes little, if any, growth in March and November and is usually brown and dormant during the other winter months. In the winter of 1951-52, the Alabama Experiment Station produced 430 pounds of beef per acre on a mixture of ryegrass and crimson clover seeded on a Coastal Bermuda pasture at Auburn, Alabama. Although this production is considerably greater than most farmers are getting from such a combination, it does suggest a potential winter production of at least 430 pounds of beef per acre. Adding this to the calculated summer production of 2250 pounds of beef per acre from 800 pounds of N plus supplemental irrigation and rotation grazing, gives a total annual production potential of 2680 pounds of beef per acre.

A pasture production potential of 2680 pounds of beef per acre, well over 100 times the natural production of the native vegetation, is in sight in 1954, assuming, of course, that all growth factors are properly balanced and all assumptions hold. Although probably possible, such production is neither practicable nor economically sound at this time. It is gratifying to know, however, that there exists in Georgia and the southeastern United States a pasture potential that will permit Americans to be beef-eating people even though the population may increase several fold.

Is 2680 pounds of beef per acre the maximum pasture production possible in Georgia? In light of the phenomenal advance made in recent years, it would seem foolish to conclude that the ceiling has been reached.

Time alone can pass judgement upon the wisdom of the words written here. This writer has the faith to believe, however, that 100 years of well supported forage and pasture research can cause some chance-reader of this article in the year 2054 to say, "I suppose he did the best he could. He just couldn't know that 100 years of good research could increase the pasture potential in the Coastal Plain so much."

DR. BURTON HONORED BY MAGAZINE

Dr. Glenn W. Burton, principal geneticist of the Coastal Plains Experiment Station at Tifton, Ga., whose work with Bermuda grass has revolutionized grassland farming in the south, has been named 1954's "Man of the Year" in service to southern agriculture. The award, presented by the Progressive Farmer magazine, stemmed from the wide variety of "wonder grasses" which the quiet, modest scientist has developed in his work with USDA at the Tifton station. But it has not been in agriculture alone that Dr. Burton has received recognition—in 1951 he and his family were named America's "Methodist Family of the Year" by the Christian Advocate, official publication of the Methodist Church.

FUTURE OF SOUTH'S CATTLE INDUSTRY

IRLO BRONSON, Kissimmee, Florida
Formerly President, Florida Cattlemen's Association,
State Senator and Cattle Rancher.

As I am a native Floridian and have spent all of my life raising beef cattle in Florida, my talk will cover mostly conditions and possibilities as I know them here. As most of the South is now progressing about alike in the cattle industry, I feel that the entire area will in all probability move one way or the other about the same.

The tick program was started in Florida in the early twenties and the State was officially declared free of ticks about 1936.

As the program moved from the Northwest end of our State to the Southern tip, improved bulls were brought in by cattle owners.

No doubt all of those present vividly recall the depression years of the thirties when Federal Government offered to farmers the old A.A.A. Program. I, personally, feel that this program should be given a large part of the credit for getting pasture improvement started. Certainly in Florida, and I believe in a great portion of the entire South.

My father and I did our first pasture work in 1936. We had purchased a car of registered Hereford bulls in 1932 and had also put quite a number of Brahman bulls into our herd.

We could see that better pastures were necessary if we were to get the best results from our breeding program. We were the first to do any amount of pasture work in our county and at least one of the first in the State.

In the early pasture program we hesitated to use our better soils for improved pastures as we thought we needed this to maintain our herds. For this reason we put improved grasses on land which should have been left to grow timber and as shelter belts and protection for wildlife. For this reason many cattlemen have been disappointed in results obtained.

Another serious mistake made by us and most other cattlemen has been not putting in adequate cross fences to give proper rotation on our improved pastures. For this mistake we have not gotten full use of our pastures by rotation and our improved areas are now so heavily infested with internal parasites that we are facing a real problem. Had we been able to see these problems in the early days we would be much farther ahead today.

We have also learned, the hard way, that proper maintenance practices and adequate fertilization are a vital part of the future of our cattle industry.

Twenty years ago we had no improved pasture to speak of. Today, there are over 2,000,000 acres of improved pasture in the State.

In 1930 the beef produced was valued at about $3,600,000.00. Last year it was valued at $31,000,000.00.

Personally, I am not at all doubtful about the future of the beef cattle industry of the South.

LESSONS FROM FLORIDA, IOWA, KANSAS

G. B. KILLINGER, Agronomist
Florida Agricultural Experiment Station

All of us recognize the tremendous advances made in Grassland Farming throughout the entire nation during the last two decades. Certainly the Soil Conservation Service, United States Dept. of Agriculture, other Federal agencies and State Experiment Stations and Extension Services have been the sparkplug in this movement.

Kansas found new equipment and methods of harvesting seeds of native grasses in the 30's. For example, prior to this time there was no record of even a pound of Buffalo grass (Buchloe dactyloides) being harvested.

Type and quantity of vegetation is extreme in Kansas, moving from a 42 inch rainfall in the southeastern part of the state to 15 inches in parts of the western area.

Limestone, nitrogen, phosphorous and potassium are being used to a limited extent on some of the more productive pastures and on hay and silage crops.

Other than the so-called native grasses, brome, orchard, Bermuda, Sudan, alfalfa, red clover, sweet clover, and winter wheat are profitable grazing, hay and silage crops.

Mowing and grazing management of pastures for weed control and high quality production is being recommended. The one major problem in my mind is lack of rainfall and the erratic distribution of the rain that does fall.

Moving on to Iowa pastures, I am still impressed with the relative high cost of the land and the small amount of attention given many acres of pasture in that state. Scholl, Hughes and Krenzin say "Most Iowa pastures are giving poor returns; they've been neglected and abused. Emphasis has been on improved and efficient methods of growing corn, soybeans and other plowland crops, that can be sold for cash, or fed when livestock prices are favorable.

"Our poorer land, which couldn't be expected to bring much return anyway, has been left for pasture."

Over one-fourth of Iowa's total farm land is permanent pasture, rotation pasture or supplemental pasture.

Leaving Iowa, one must recognize the many cribs of corn, haymows full of hay, filled silos and pasture after pasture of unimproved bluegrass. Because of research and demonstrations more and more farmers in Kansas and Iowa now know that pasture improvement is profitable.

Moving to Florida 13 years ago, I arrived just when a good improved-pasture program was getting

started. Dr. Roy Blaser, formerly of Florida, now in Virginia, had demonstrated the successful growing of white clover in combination with carpetgrass and the value of liming and fertilization on grass pastures.

The discovery of minerals to cure salt-sickness of cattle, eradication of the cattle-tick, federal assistance for pasture improvement, and favorable price of cattle.

Grasses alone were not to be the final answer. Most Florida soils utilized for pastures were notably acid, low in nitrogen, phosphorous and potassium as well as many minor elements.

With the use of lime, phosphate, potash and minor elements where deficient, it was found that white clover could be grown successfully on many acres. Crimson clover, red clover, Hubam, Floranna, black medic, hairy indigo, Alyce clover and alfalfa have all been added to the list of successful forage and pasture crops grown in Florida.

Since 1940 the flatwoods or poorly drained pineland areas in Florida and other coastal states have been improved for pastures and have given more production and show more promise than much of the better drained tillable soils.

Yields of dry forage on an acre basis have advanced from a ton or less per acre in the 1930's to 5 to 10 tons per acre in 1950. This increase in yield is directly attributed to new varieties and fertilization.

Naturally, cattle quality and quantity have advanced with pasture improvement within the past 15 years.

TRACE ELEMENTS IN ANIMAL NUTRITION

GEORGE K. DAVIS, Animal Nutritionist
Florida AES, Gainesville

A glance at the program for today certainly indicates that cooperative research on soil, grass, animal farming problems is necessary if we are to achieve a well rounded and satisfactory livestock program in the Southeast.

In presenting a discussion of trace element nutrition to the International Grassland Congress, I had occasion to refer to the occurrence of trace element deficiencies in the North American continent and in the United States in particular, and it was obvious that the incidence of deficiencies in Florida was marked as compared to the rest of the country. Practical experience has demonstrated that in the sandy lands of the Southeast trace element deficiencies have a marked effect on the production of livestock in this area.

Dean Harold H. Hume speaking before a Soil Science meeting once remarked that Florida has been subjected to an almost continuous laundering for many centuries, and undoubtedly the trace elecents that were originally here have long since been washed out.

I am sure you have often heard of the comment that the incidence of deficiencies is almost in inverse ratio to the distance from the experiment station. To some extent this is true in Florida, but the wide spread nature of our Animal Nutrition projects has led us to investigate the need for trace elements throughout the state. There is very little of Florida that does not require at least one of the trace elements.

In Florida we have conditions that make the state itself a laboratory for experiments with trace elements.

Above: Executive Committee Chairman Howard B. Sprague, Department of Agronomy, Pennsylvania State College, and Committeeman Warren Huff of Ashcraft-Wilkinson Co., Columbus, Ohio. Below: One of two foreign delegates was L. N. Johnson of the Upper Thames River Conservation Authority, London, Ontario, Canada.

SERVISS HEADS ACS FERTILIZER DIVISION

George H. Serviss, agronomist for the G. L. F. Soil Building Service, Ithaca, N. Y., has been elected 1955 chairman of the American Chemical Society's Division of Fertilizer and Soil Chemistry. He succeeds Jesse D. Romaine, secretary and chief agronomist of the American Potash Institute, Washington, D. C.

Dr. G. L. Bridger, head of the department of chemical engineering in Iowa State College, was named vice-chairman and Dr. Stacy B. Randle, state chemist at the New Jersey Agricultural Experiment Station at Rutgers, was chosen secretary.

The Division of Fertilizer and Soil Chemistry, which has nearly 1,000 members, is one of the American Chemical Society's 21 scientific and technical divisions covering various fields of chemistry and chemical engineering. With more than 72,000 members, the Society is the world's largest professional association of scientists and engineers and has local sections in every state of the Union, the District of Columbia, Puerto Rico and Hawaii.

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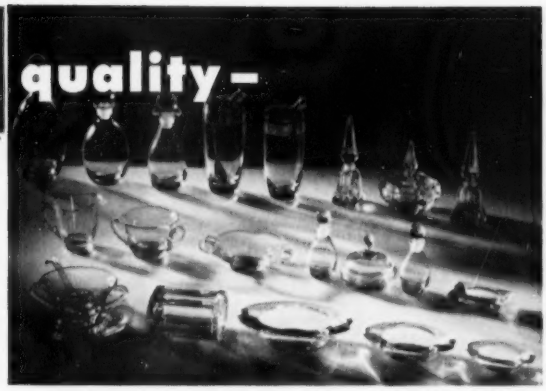

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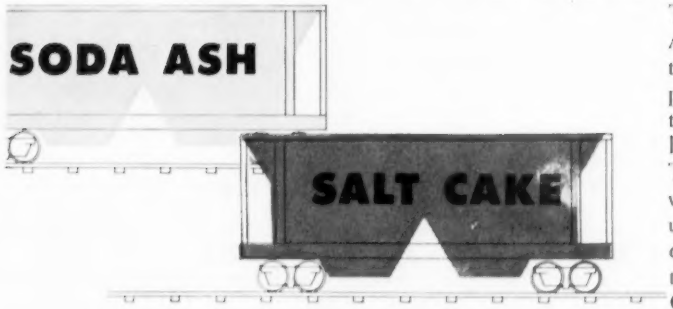

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ALABAMA

McMillan & Harrison Fertilizer Co., Mobile, is now completely under the ownership of **Horace L. Long**, who has purchased the interest of **S. K. Smith** and his wife.

ARIZONA

King & Fenn, Kingman, use a novel method to transport guano taken from caves near Lake Mead. They ferry it across the lake by air and then truck it to Santa Monica, California. The plane carries a ton on each trip, and a round trip—including loading and unloading—can be made every thirty minutes. K&F expect to recover 100,000 tons of guano from this deposit . . . and the reason for the airplane is that the caves are in the roughest and most inaccessible region of Arizona.

FLORIDA

American Cyanamid takes its suggestion box seriously. At the Saddle Creek Mine near Lakeland recently two employees divided $1200 for constructive ideas. One of the winners was such for the second time, according to **Arthur Crago.**

* * *

Diamond R. Fertilizer, Orlando, gains a county contract recently because **Wheeler Fertilizer** came late with their bid, which would have saved the county $1553.76.

GEORGIA

Gilman Paper's subsidiary, St. Mary's Kraft Corporation at St. Marys, now has in operation the first and only modern multi-stage bleach plant of its kind in the U. S. Gilman's mills now can produce all shades of white and colors, which gives fertilizer baggers a full range of multiwall bags, from unbleached kraft to bright bleached papers.

ILLINOIS

Swift & Company's plant food division have announced Golden Vigoro, which, according to vice-president C. T. Prindeville, will not burn growing grass, and which carries the availability of nitrogen over a period of months instead of weeks. This is explained by A. H. Bowers, their agronomist, who says the nitrogen source is not water-soluble. **Batelle Memorial Institute** ran a 70-plot test which demonstrated excellent grass-growing qualities. The new produce supplements, but does not replace Vigoro in the Swift line of plant foods.

* * *

Effingham Equity is building a 10,000 ton fertilizer plant at Effingham, whose building is due to be completed next month. It will be corrugated asbestos covered; 250 by 65 feet with a 60 foot tower. The plant will have a modern soil-testing laboratory. **Paul Goldstein**, manager, estimates the plant at $100,000.

* * *

Allerton Lumber Co. are building a fertilizer plant at Allerton, which will be 65 by 90 feet, and should be completed by Spring, according to manager **Ralph Allen.**

* * *

A. B. Chrisman Company has opened its new fertilizer plant at Meredosia. It includes a well equipped soil testing laboratory.

INDIANA

Ed E. Crouse, Ralph Dare and **Ed J. Kruckeburg** have opened a plant at Kitchell to supply liquid fertilizer and application equipment, the first full-scale plant of its kind in the State. The opening publicity stressed the odorless character of the plant, and the difference between it and the "old style bone-dust factories of a quarter century ago."

IOWA

Tri-State Fertilizer, Burlington, is about ready to produce pelletized fertilizer, with some 30 employees. Officers are **John Witte, Lewis Johnson** and **Grant Stevenson.** Mentioned last month, we did not have the name of this new company at press time.

LOUISIANA

Plantation Fertilizer, Houma, has announced a complete line of liquid fertilizers and will manufacture and sell application equipment. Their research has shown that sugar cane prospers well with anhydrous ammonia and direct application of phosphoric acid and a solution of muriate of potash. Their Flo-Mix machine, which applies these plant foods has many special features which they have developed through field tests. They state "Flow-Mix is not just another method of fertilizing. It is the first method by which varying nutrients may be efficiently applied to the soil using fertilizer materials which have been proved to be the most effective form of fertilizer." Patent applications have been filed on all of the Flo-Mix methods and equipment.

* * *

Port of Lake Charles has made good progress with its phosphate rock grinding plant, a $1,500,00 addition to the port which is expected to add 100,000 annual tons of cargo, and to reduce costs to the user of phosphates. Grinding mills are due to be in production this month.

MARYLAND

Davison Chemical, Baltimore, tied up with the Disney "Vanishing Prairie" film with excellent success, using the prairie dog character to supply testimonials for their Davco granular goods. When the film was shown at local movie houses, they tied up in local newspapers with it.

* * *

Olin Mathieson, Baltimore, has set up a series of awards for winners of the **National Junior Vegetable Growers Association** in the form of merchandise awards of high analysis fertilizers.

MISSISSIPPI

Delta Chemical and Fertilizer, Greenville, has pesticide and fertilizer units in its new $100,00 plant.

* * *

Modern Fuel and Ammonia Service has been established at Natchez with capital stock of $20,000.

MISSOURI

Missouri Farmers Association has

established and amplified its anhydrous ammonia service points at Glasgow, Marthasville, Perry and Versailles.

NEBRASKA

Norfolk Fertilizers Inc. expect to be in operation by the end of this month at Norfolk, working under a franchise agreement with **Lincoln Service and Supply** of Grand Island. Ten stalls in a railroad roundhouse have been leased for the purpose and $100,000 of equipment is being installed. Grand Island has plants at three points in Nebraska.

NEW JERSEY

Pennsalt's I. P. Thomas division has put into operation at Paulsboro a new plant for the production of concentrated phosphoric acid, according to R. R. Hull, president. The plant was designed and built by **Chemical Construction Corporation** and is rated at 25 daily tons. The Thomas division will use the output largely to produce triple superphosphate and high strength granular fertilizers. They have served the northeastern seaboard for 85 years and were only recently acquired by Pennsalt, as announced here last month.

NORTH CAROLINA

Liberty Manufacturing Company, Red Springs, are another fertilizer outfit which has gone into the production of application equipment for liquid nitrogen. They have an applicator set-up which will equip most tractors for $160.

OREGON

Organic-Pacific Co, Pendleton, are about to produce fertilizer from sawdust by the process developed by **Earp Laboratories,** Hampton, N. J. which depends on bacteria of a special type which accomplishes in 36 hours what natural decomposition does in six months. The operation is continuous-flow.

* * *

Hughes-Johnson Chemical's plant at Portland bought its TVA cone acidulator from **Fertilizer Equipment Sales Company** in Atlanta, Georgia. This amplifies the items about the plant which appeared here last month.

OKLAHOMA

Phillips Petroleum Company has established the **Phillips Agricultural Demonstration Project,** located four miles north of Foraker, Osage County, Oklahoma, according to an announcement made by **K. S. Adams,** chairman, and **Paul Endacott,** president.

Many demonstration projects involving fertilizer as well as other agricultural petrochemicals will be under study.

Phillips Agricultural Demonstration Project is designed to study the feasibility of using nitrogen and phosphate fertilizer materials on native and introduced grasses and legumes, the economics of revegetating areas previously cultivated, and range land conservation and management. Also under study will be the adaptability of various plant species and selected varieties so important in pasture improvement. This will include the gathering and propagation of wild native legumes such as: Illinois bundle flower, prairie clover, wild alfalfa and Baptasia.

Other projects planned involve the use of various farm chemicals and petroleum products in grassland farming as well as measurement of results through animal unit production.

Phillips Agricultural Demonstration Project will provide a practical demonstration area where farmers and ranchers, technical specialists, students and others with agricultural interests can observe the various projects under way. Demonstrations will be undertaken with the cooperation of local, state, federal and related agencies.

TENNESSEE

Grace Chemical began production in mid-December in the great 400 daily ton ammonia-urea plant at Woodstock, whose progress has been followed in this department throughout its conception and construction since ground-breaked in October, 1952. The plant cost in the vicinity of $20,000,000. The top officials of **W. R. Grace,** parent company, were present for the opening.

* * *

Tennessee Corporation has completed construction at its Copperhill plant to increase the output of sulphuric acid and other items.

TEXAS

Standard Sulphur has acquired the rights on 500 Allen Dome area acres from **Gulf Oil** and **Brazos Oil and Gas.** They plan a $1,500,000 plant which will turn out 200 daily tons when it is completed late this year. When the plant has paid for itself Gulf and Brazos will share in profits.

AUSTRALIA

North Queensland Fertilizers and Chemicals' new plant, in production now, takes care of their own needs for sulphuric acid and superphosphates.

AUSTRIA

Krems Chemie, Vienna, is in production with its new sulphuric acid plant, the first in Austria. They swap pyrites with the Yugoslavs for Austrian rayon.

BRAZIL

W. R. Grace & Co., Farbwerke Hoechst A. G., and **American Home Products Corporation** have disclosed plans to construct a $5,000,000 chemicals plant in the Sao Paulo area of Brazil for the production of DDT, industrial solvents, detergents, caustic soda, chlorine and other chemicals.

The three partners are forming a new company, tentatively known as Fongra Productos Quimicos, S. A., in which W. R. Grace & Co. and Farbwerke Hoechst A. G. have equal participation and American Home Products Corporation a smaller participation.

Construction will begin early this year with full production planned for 1957.

BURMA

Japan Ammonium Sulfate Association is sending a mission to Burma to survey the possibilities of a fertilizer operation there. If established, the plant should turn out 100,000 annual tons.

CANADA

Potash Company of America are preparing to sink a $3,500,000 mine shaft at Patience Lake, with a great refrigeration plant to create a ring of ice around the shaft area to freeze off the water and solidify the materials. The shaft is to go down 3,000 feet through crumbling, sedimentary materials. Saskatchewan's potash reserves are estimated to be the largest in the world.

* * *

Western Potash Corporation, Calgary, are already down 1,000 feet with their shaft at Unity, Saskatchewan, which have another 2,000 feet to go.

* * *

Inland Chemicals Canada, Ltd, newly incorporated, headed by **Robert Campbell** are building a $1,000,000 sulphuric acid plant at Fort Saskatchewan, which will use elemental sulphur from **Shell's** Jumping Pound Plant. **Lummus Co.** has the construction contract, and expects to complete by next Summer.

* * *

Ortho Agricultural Chemicals, Ltd, subsidiary of California Spray-Chemical, has been formed with Vancouver headquarters to formulate and distribute pesticides.

ENGLAND

United Sulphuric Acid Corporation, will build an anhydrite sulphuric acid plant with 148,000 annual tons of acid at Widnes, Lancashire. It is due in production by April.

FINLAND

The Government plans to double the capacity of the State-owned nitrogen plant at Oulo, which now runs 16,000 annual tons.

FORMOSA

Taiwan Fertilizer Co. will build a $20,000,000 plant. **Hydrocarbon Research,** New York, is responsible for the design of the ammonia and gas synthesis units and will produce equipment and supply technical assistance. Through **Vulcan Copper and Supply,** Cincinnati, **Inventa A. G.,** Switzerland, will supply the urea process.

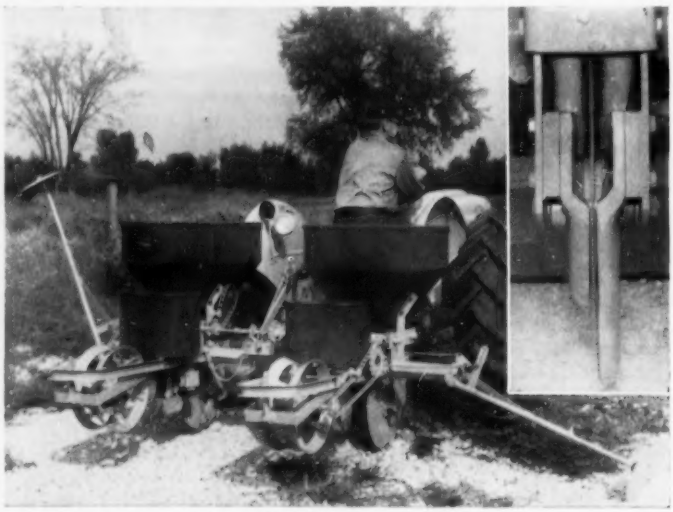
ISRAEL

Fertilizers and Chemicals Ltd, Haifa have begun production in their new $15,000,000 three-unit plant which turns out phosphoric acid, dicalcium phosphate and potassium sulphate. They are building a $3,500,000 plant with 14,000 annual tons of ammonia capacity and a 40,000 annual ton ammonium sulphate plant—both of which are expected to come in next May.

* * *

Makhtteshim Chemical Works Ltd. are installing machinery in three new plants in Beersheba which will produce pesticides, using chlorine from their own recently completed $1,700,000 plant in Beersheba.

The new deep placement fertilizing technique now approved by many of the nation's leading agronomists, farmers and fertilizer manufacturers has resulted in the production of an entirely new type fertilizer applicator and planter. Working in cooperation with soil and fertilizer experts at Michigan State College, Farmcraft Mfg. Co., Inc., of Fort Wayne, Indiana, is producing a unit called the Hi-Yield, Two-Level Fertilizer Applicator and Planter. The new unit, the first of its type ever offered, follows the latest trend by placing two bands of fertilizer in the ground. One band is placed 8 inches down, the other, 4 inches down. Seeds are placed 2 inches to one side of the shallow band below the ground surface. Seed depth is adjustable from approximately 1 to 2 inches. The unit represents 7 years of research, development and testing. Unique construction enables the applicator-planter to lay down two different analyses simultaneously (see inset in picture below). Divided seed hoppers also make inter-planting possible. The Hi-Yield will do drill or hill drop planting, by simple interchange of metering plates in the hoppers. In addition, the unit can be adapted to liquid fertilizers. Designed for two-row use in widths adjustable from about 34 to 60 inches. It features a three-point hitch standard on Ferguson and Ford tractors. For further information, contact Farmcraft Mfg. Co., Inc., Sheridan Road, Fort Wayne, Indiana, or C. M. Hansen, Assistant Professor of Agricultural Engineering, Michigan State College, East Lansing, Michigan.



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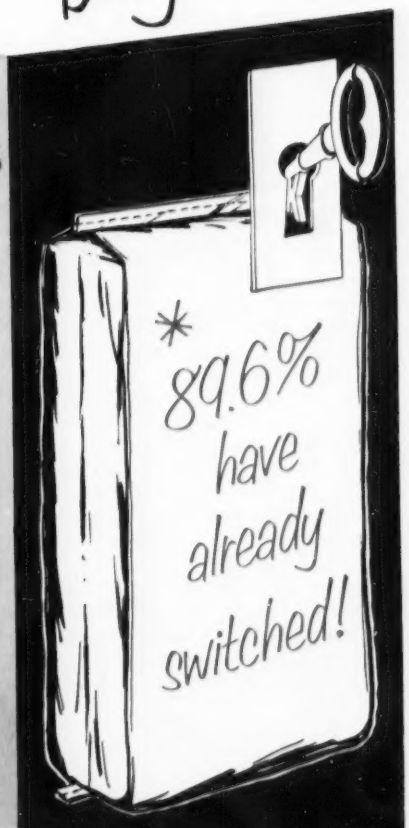

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Personals . . .

Bryce L. Rhodes and **H. Clair Dyer** are recent additions to **International Minerals & Chemical Corporation's phosphate chemicals division, Howard F. Roderick,** vice president in charge of that division, has announced.

Mr. Rhodes has been named development manager while Mr. Dyer has been made Eastern area sales manager for the division's special products department.

* * *

William Bellano has been appointed production manager of the phosphate chemicals division in charge of their new Phosphate Chemicals Plant at Bonnie, Florida and also will be responsible for the corporation's phosphate chemicals operations at Tupelo, Mississippi and Wales, Tennessee. Since February of last year he has been manager of general engineering of the corporation's engineering division.

Mr. Roderick also announced the promotion of **Neil B. O'Donnell** as assistant manager of production and **Robert V. Safford** as assistant manager of engineering and maintenance at International's Bonnie Plant. Mr. O'Donnell formerly was superintendent and Mr. Safford formerly was plant engineer of the Bonnie plant. **James F. Roe,** formerly area production supervisor, has been named to succeed Mr. O'Donnell as superintendent of the Bonnie Plant.

* * *

George W. Moyers, vice president in charge of **International Minerals & Chemical Corporation's Phosphate Minerals Division,** has announced three new appointments, effective January 1.

F. B. Bowen, manager of the Florida department, has been advanced to the newly created position of production manager of the Phosphate Minerals Division. He will supervise from his headquarters in Bartow, Florida, the production facilities in both the Florida and Tennessee phosphate departments. He will report directly to the division's general manager. **F. A. Koechlein.**

R. H. Linderman has been named domestic sales manager for the division. In recent years Mr. Linderman has been southern manager of the phosphate sales department. In his new post he will assume full responsibility for the domestic sales department, reporting directly to the division sales manager, **S. T. Keel.** He will also continue to handle sales in the southern area for the time being.

Edward F. Perkins, formerly European sales manager for the Phosphate Minerals Division, has been named assistant export sales manager. He will assume managerial responsibilities in the export sales department, reporting directly to the export sales manager, **Herman F. Dengler.** He will also continue to function as European sales manager.

H. D. McGowan

Hans Stauffer, president of Stauffer Chemical Company, has announced the appointment of H. D. McGowan as assistant director of Market Development. Mr. McGowan was formerly associated with the General Chemical Division, Allied Chemical and Dye Corporation, and was later vice president and general manager of Algonquin Chemical Company. He will work with Paul S. Braillier, director of Market Development and will headquarter in the Stauffer New York office.

Three more experts in chemical agriculture have been added to the staff of research specialists at **American Chemical Paint Co.,** Ambler, Pa.

H. E. Bingham

The Sales Division of Spencer Chemical Company, Kansas City, Mo., has announced the appointment of Harold E. Bingham, director of Traffic, as acting director of Product Sales, to fill the position vacated by the resignation of George Taylor. During Mr. Bingham's leave of absence from the Traffic Department, George Falconer will continue to serve as traffic manager. Mr. Bingham joined Spencer at the time of its entrance into commercial operation in 1946 and was responsible for organizing the company's traffic department.

The new appointments, announced by **Leon Cherksey,** president, include **Dr. L. W. Melander,** project leader, research development; **Richard A. Fosse,** Western representative of the agricultural chemicals division, research and development department; and **John E. Gallagher,** research specialist.

Dr. Melander was plant pathologist for **USDA** pest control branch and established a program for eradicating native barberries with hormone-type chemicals. For three years, Mr. Fosse worked with **Monsanto Chemical** on the development of herbicides and has served as a county weed supervisor.

* * *

Robert B. Coons, vice president of **American Potash & Chemical Corporation,** has been named a director of the company, it was announced by **Peter Colefax,** president.

The appointment increases the size of the company's board of directors from eight to nine.

Mr. Coons, who is in charge of Industrial Relations, Purchasing and Traffic, joined American Potash & Chemical Corporation in 1946 as assistant to Mr. Colefax, and was named a vice president in August, 1947.

Almost any other time we could have picked would have been better for a visit than was the day we dropped by to see Walker Elliott, plant manager at V. W. Norris & Son, Inc. at Rushville, Ind. After inquiring at the office and several places in the plant (above the hammering of the dryer), we made our way past the cooler and along a ramp beside the dryer up to a platform beyond the ammoniator, where we found him supervising the removal of a broken glass gauge from a solution tank. Here you see him holding the gauge as he ordered the necessary replacement parts to get the tank back in operation. Aside from this little difficulty, Mr. Elliott said things were going along exceptionally well this fall.

Sydney T. Ellis has been named executive vice president of **Commercial Solvents Corporation,** it was announced by **J. Albert Woods,** president, following a meeting of the company's board of directors.

Mr. Ellis has been associated with CSC since 1951. His previous position was administrative vice president. He has been a member of the Board of Directors since 1953.

* * *

Directors of **Butler Manufacturing Company** have named **John A. Morgan** to the newly created post of executive vice president, **Walter L. Smith** was elected vice president—engineering and production, it was announced by **Oscar D. Nelson,** president.

Mr. Morgan's rise in the Butler Company spans a career of 15 years. Mr. Smith was named chief engineer of the Company in 1939.

* * *

Wm. Rhea Blake, executive vice president of the **National Cotton Council,** was awarded a special certificate of recognition for "outstanding service to agriculture and rural life" at the 68th Annual Convention of the Association of Land Grant Colleges and Universities meeting at the Statler Hotel.

Ed Lipscomb, public relations director of the Council, and past president of the Public Relations Society of America, will serve as president of the **Agricultural Relations Council** during the year ahead, the organization of agricultural public relations men announced recently.

Named to serve with Mr. Lipscomb were **John J. Lacey,** public relations director of the **American Farm Bureau Federation,** Chicago, vice president; and **Lowell A. Kern,** public relations director, Agricultural Committee, **American Petroleum Institute,** New York, secretary and treasurer.

St. Regis Paper announces the retirement of vice-presidents **H. Stanley Hangen** and **Carl H. Hartman** under their retirement plan. Both will continue to serve in consulting capacities.

Their mid-Atlantic district has been consolidated into the Eastern district, effective first of this month, with **Howard C. Peterson, Jr.,** vice-president, in charge of the consolidated district.

Other appointments in the Eastern district include **Lauren E. Gjovig** as manager of engineering, and **George W. Leopold,** manager of the materials testing laboratory at Allentown, Pa.

Mr. Hangen, who was in charge of the now merged mid-Atlantic district, joined St. Regis in 1920. Mr. Hartman, who retired as vice-president in charge of multiwall bag development, joined Valve Bag Company in 1910 and this later became part of St. Regis. He is credited with a number of improvements in multiwall bag making and filling equipment, and had an active part in the introduction of multiwall bags into the fertilizer industry, and other fields.

* * *

Arthur Overgaard has been elected president of the Wisconsin Agrilime Producers Association at the annual meeting in Madison. Other officers named were **R. W. Lutz,** Oshkosh, vice president; **Charles Coburn,** Waukesha, secretary-treasurer; and **Michael Brisch** of Manitowoc, **Erwin Ellefson** of Viroqua and **Loren D. Nellis** of Ripon, directors.

To those of our readers who don't know him, this is Francis W. Reed, who heads Kova Fertilizer, Inc. at Greensburg, Ind.. When he came into the industry 19 years ago from the oil business, his first mixer was "a wheelbarrow and a shovel" . . . which is a far cry from the modern plant located a couple of hundred feet beyond the neat office building where we snapped this photograph. In addition to holding down his desk as president and treasurer of the company, Mr. Reed actively supervises the operation of the plant; in fact, he was over in the plant when we dropped in for a visit, but Mrs. Marie Goddard (secretary of the firm, who has been with it since its beginning) called him back to the office to talk with us. A native of Greensburg, Mr. Reed resides there with his family; his oldest son, aged 21, helped out at the plant for two years before entering the Army, and is now stationed at Camp Gordon, Ga.; the second son is a student at Purdue University, and a younger daughter and son live at home. Francis Reed's hobby is fishing, and he has done some flying as a pastime; he still holds a pilot's license, but says he doesn't find much use for it with the two older boys away. As a part-time farmer and cattleman, Mr. Reed is a fertilizer consumer as well as a manufacturer. As one might guess, he is an ardent booster of the Midwest Soil Conservation program, and he predicts that in another year or two practically all the plant food sold in his section will be granular.

USDA PRELIMINARY REPORT FISCAL YEAR ENDING JUNE, 1954

By
WALTER SCHOLL, HILDA M. WALLACE
and ESTHER I. FOX
Fertilizer and Agricultural Lime Section
Soil and Water Conservation Research Branch
Agricultural Research Service
U. S. Department of Agriculture
Beltsville, Maryland

For the year ended June 30, 1954, a preliminary estimate indicates that use of commercial fertilizer in the United States and Territories (Hawaii, Puerto Rico, and Alaska) amounted to 22,875,000 short tons, a decrease of 538,000 tons or 2.3 percent, from the quantity used in 1952-53. Consumption of commercial mixtures amounted to 15,675,000 tons, materials containing primary plant nutrients (N, P_2O_5, K_2O) for direct use to 6,620,000 tons, and secondary and trace element materials to 580,000 tons. These quantities were, respectively, 0.3, 2.8, and 33.9 percent below consumption in 1952-53. The total tonnage of fertilizer used in July-December 1953 was approximately 18 percent less than in the corresponding period of 1952, while the tonnage used in January-June 1954 was 4 percent more than in the corresponding period of 1953.

Regionally, the total consumption of fertilizer east of the Mississippi River was 2 to 7 percent less than in 1952-53 (Table 1), whereas it was up to 7 percent more in the areas west of the Mississippi. Consumption in the Territories was 7 percent more than in 1952-53. Increases in the consumption of mixed fertilizers (2 to 18 percent) occurred only in the Middle Atlantic, West North Central, and Pacific regions and the Territories. The tonnage of materials for direct use was higher (2 to 10 percent) only in the West North Central and Mountain regions and the Territories.

Consumption of primary plant nutrients amounted to 5,851,000 short

Table 1.—Preliminary estimate of fertilizer consumption, year ended June 30, 1954[1]

Region	Mixtures	All fertilizers[2]	
		Quantity	Relative consumption 1952-53 = 100
	1,000 tons	1,000 tons	Percent
New England[3]	365	435	93
Middle Atlantic[4]	1,850	2,080	98
South Atlantic[5]	4,990	6,095	97
East North Central[6]	3,685	4,870	95
West North Central[7]	1,350	2,235	107
East South Central[8]	2,025	3,080	97
West South Central[9]	715	1,395	99
Mountain[10]	65	385	106
Pacific[11]	350	1,900	94
Continental U. S.	15,395	22,475	98
Territorial[12]	280	400	107
Total: 1953-54	15,675	[13] 22,875	98
1952-53	15,722	[13] 23,413	100
1951-52	15,086	[13] 22,432	96

[1] Includes fertilizers distributed by government agencies.
[2] Includes mixed fertilizers, primary nutrient materials used directly, colloidal phosphate and phosphate rock, basic slag, processed manures, sewage sludge, secondary and trace element materials. Does not include liming materials, but includes gypsum.
[3] Maine, N. H., Vt., Mass., R. I., Conn.
[4] N. Y., N. J., Pa., Del., D. C., Md., W. Va.
[5] Va., N. C., S. C., Ga., Fla.
[6] Ohio, Ind., Ill., Mich., Wis.
[7] Minn., Iowa, Mo., N. D., S. D., Neb., Kan.
[8] Ky., Tenn., Ala., Miss.
[9] Ark., La., Okla., Tex.
[10] Mont., Idaho, Wyo., Colo., N. Mex., Ariz., Utah, Nev.
[11] Wash., Oregon, Calif.
[12] Hawaii, P. R., Alaska.
[13] Materials not guaranteed to contain N, P_2O_5, or K_2O included in 1953-54 totals, 580,000 tons; in 1952-53, 877,487 tons; and in 1951-52, 785,050 tons.

Table 2.—Preliminary estimate of primary plant nutrients contained in all fertilizers and average nutrient content of mixtures, year ended June 30, 1954

Region	N	Available P_2O_5	K_2O	Total Nutrients		
				Quantity	Relative consumption 1952-53 = 100	Weighted percent in mixtures
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	percent	percent
New England	26	44	47	117	93	28.4
Middle Atlantic	110	238	186	534	101	26.4
South Atlantic	378	473	468	1,319	99	22.0
East North Central	266	534	584	1,384	103	31.7
West North Central	234	331	155	720	116	35.4
East South Central	267	284	210	761	101	23.6
West South Central	164	151	92	407	105	26.3
Mountain	69	58	3	130	115	29.9
Pacific	240	94	31	365	110	27.2
Continental U. S.	1,754	2,207	1,776	5,737	104	26.7
Territorial	56	20	38	114	104	28.9
Total: 1953-54	1,810	2,227	1,814	5,851	104	26.8
1952-53	1,637	2,271	1,740	5,648	100	25.9
1951-52	1,422	2,199	1,582	5,203	92	24.9

[1] Includes 2 percent of the colloidal phosphate and 3 percent of the phosphate rock marketed for direct application, as available P_2O_5.

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tons (Table 2). This was an increase of 203,000 tons, or 3.6 percent over the quantity in 1952-53. The increase in nitrogen was 173,000 tons (10.6 percent) and in K_2O 74,000 tons (4.3 percent), but the consumption of P_2O_5 decreased 44,000 tons (2 percent). The amounts and proportions of the nutrients consumed in mixed fertilizers were 798,000 tons (44 percent) for nitrogen, 1,789,000 tons (80 percent) for P_2O_5, and 1,609,000 tons (89 percent) for K_2O. Materials for direct use accounted for 103,000 tons of the increase in nitrogen. Although mixtures supplied 7,000 tons more P_2O_5 than in 1952-53 the use of this nutrient in direct-application materials decreased 51,000 tons. The use of K_2O increased 55,000 tons in mixtures and 19,000 tons in materials for direct application. In most regions of the Mississippi, there was a decrease in the use of P_2O_5 both in mixtures and as material for direct application.

The weighted average plant nutrient content of mixtures are shown in Table 2. The national average increase from 25.85 percent in 1952-53 to 26.8 percent in 1953-54. This average, in 1953-54, comprised, nitrogen 5.1, P_2O_5 11.4, and K_2O 10.3 percent. The values for these nutrients in 1952-53 were 4.63, 11.34, and 9.88 percent, respectively.

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Safety

SOUTH CAROLINA ORGANIZES ITS SAFETY GROUP

President H. Grenville Smith of Canadian Industries Ltd. Chatham, Ontario, Canada, whose employees were feted recently to celebrate 7 years without a lost-time accident, is here shown presenting an individual award to Margaret Evans for her personal contribution to the record.

Miss Faith Clayton; president of the South Carolina Industrial Commission opened this first meeting of the state-wide fertilizer section with greetings and a hope for growth. The support by South Carolina fertilizer plants was excellent; exceptional for a new undertaking. The enthusiasm of fertilizer people for education along accident prevention lines was evident. Miss Clayton said she was certain that enthusiasm would reduce accident frequency and cut accident costs in one of the largest industries in the state. Door prizes presented by local merchants were won by Ed Burroughs of Royster Guano Co. and H. D. Bray of Pacific Mills.

Vernon Gornto welcomed the delegates on behalf of the Fertilizer Section of the National Safety Council. He said the large attendance was an honorable indication that the fertilizer industry in South Carolina really intended to wipe out accidents and reduce costs thru the adoption of good safety programs. He hoped that more States would follow the example of South Carolina to join five others who have already organized to banish accidents from their plants in the fertilizer industry. Gornto named a nominating committee composed of: J. L. Miller, Virginia Carolina Chemical Co., J. H. Wragge of A. F. Pringle & Co., and A. L. Steele of F. S. Royster Guano Co. to name officers of the newly organized fertilizer section for 1955.

C. J. (Tex) Watts of Davison Chemical Corp. (division of W. R. Grace) keynoted the session with a rousing talk entitled "Safety Is Inspiring." He cited three primary reasons for cutting accident frequency as; humane, productive, and profitable. Dwelling on the humane he made the point that man was once worth 98¢ of chemical content. But in this age of the atom he is valued in terms of millions of dollars. No longer can we shrug off our obligation to assure the safe return home of the worker who enters our plant in the morning. He quoted Dr. Switzer who when asked what one person should do to preserve the life of another replied, "Do all you can." 'All you can' Tex said included a formal program of accident prevention to cover every worker under your supervision. President Eisenhower said that he liked to talk about safety because that was the only thing every party could agree upon. Safety is inspiring because it deals with human beings.

Ed Burroughs, F. S. Royster Guano Co., pointed out that good housekeeping is as much a daily responsibility as is shipping, receiving, manufacturing and other functions. The grandstand play of a clean plant when the Production Manager inspects is injurious not only to safety but is costly; particularly when a plant gets so cluttered that it is necessary to shut down for clean up. Cluttered loading platforms, junk on the siding, flimsy guards, tools left behind on the job; all contribute to high frequency records at fertilizer plants. The quality of a mechanic's work, said Burroughs, can often be judged by the way he finishes a job and the condition he leaves the work area. Production records for the most part are set by clean plants. Good safety experience is never enjoyed by a plant that tolerates poor housekeeping. Fertilizer plants have a poor reputation among insurance companies. Bad housekeeping increases the fire risk. Premiums for all kinds of insurance protection are high. The emphasis on good housekeeping must start in the office of the plant superintendent. First line supervisors tend to follow a good example and pass that good example down the line. Housekeeping in fertilizer plants will improve only when the daily need is recognized and when it takes its place as an integral part of the plant production schedule.

RESOLUTION ON PESTICIDE SAFETY*

In view of the potential hazards in connection with mixing pesticides with fertilizer, this committee recommends:

(1) Before engaging in such practice the toxic characteristics and the maximum allowable concentrations should be determined;

(2) Any steps necessary to assure adequate protection of the personnel should be taken;

(3) The finished product should be so labeled as to provide proper warning to all who might come in contact with the product after it left the plant.

*Passed by the Executive Committee Fertilizer Section, National Safety Council.

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W. C. Creel, Safety Director, State of North Carolina, outlined the special fertilizer industry safety drive. He told delegates that North Carolina had reduced accident frequency 40% in 18 months. A national record for speedy results. The results prove conclusively that small plants (less than 100 employees) can manage a formal safety program that will pay off. There were a number of factors involved in the North Carolina plan that assured its success. A few of those factors were:

1. Disection of the problem thru a study of all fertilizer plant accidents over a three-year period.

2. Enlistment of top management aid by direct contact with the Commissioners of Labor. Such contact was recognition that some problems were those that management had to handle. Other problems required worker education.

3. Small plant management, traditionally uninterested in accident prevention, was reminded that compensation rates are based on industry experience. The good plants pay a high rate to protect careless management of plants with bad accident experience.

4. Specific informational material was provided, tailored to the needs of small fertilizer plants. General safety information is not adequate for line management use.

5. Labor department inspectors, drilled in the specific needs of our industry visited each plant at 6 month intervals to advise local managers and appraise progress.

6. Top management and plant management accepted responsibility for the formal safety program, and made **specific** assignments of responsibility to subordinates.

7. A specific plan of operation sparked by labor department personnel which included: a. getting plants in good physical shape. b. set up simple plant safety organizations. c. accident investigation. d. plant inspection. e. first aid. f. good housekeeping. g. safety bulletin boards. h. accident records.

Mr. Creel pointed out that too many small plants seek out the "easy" solution. The maddening demand of our time is that everything must be made "easy." The "All American" safety 'out' is to blame the worker. Small plants can have workable safety programs at little expense and real profit. The experience of the State of North Carolina proves that fact without the shadow of a doubt.

Tom Clarke; General Chairman—Fertilizer Section—National Safety Council conducted a sample safety meeting with the delegates assuming the role of plant workers. Slides of typical fertilizer plant situations were shown and workers were asked to spot the hazards and suggest correction necessary for accident prevention. Clarke pointed out that safety meetings should be held in familiar surroundings; should wherever possible include an opportunity for audience participation; and should be couched in terms of the workers day to day interest on the job. The visit of the safety man from the main office should be an event eagerly awaited—and long remembered. Safety administrators could use a good course in "How to Win Friends and Influence People."

Curtis Cox introduced the members of a three man panel who described the case history of a serious accident in their plant. These men; long experienced in fertilizer production, told the group about their experiences in an entertaining and profitable manner. Participants were—J. H. Wragge; Supt., A. F. Pringle & Co., A. H. Watts, Supt., Virginia-Carolina Chemical Co., and Alton L. Foster, Supt., International Minerals & Chemical Co.

Officers elected for the State-wide South Carolina Safety meeting in 1955 were: Alton L. Foster; International Minerals & Chemical Co., Spartanburg — Chairman: E. V. Campbell; Anderson Fertilizer Co., Anderson, South Carolina — Vice Chairman and F. B. Carpenter Jr.; Virginia-Carolina Chemical Co., Charleston, South Carolina — secretary. These officers will plan the fertilizer section meeting scheduled for Charleston, South Carolina; in November 1955.

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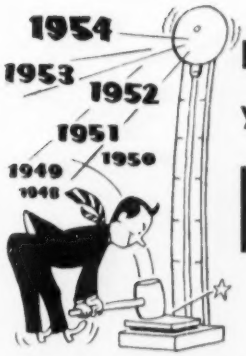

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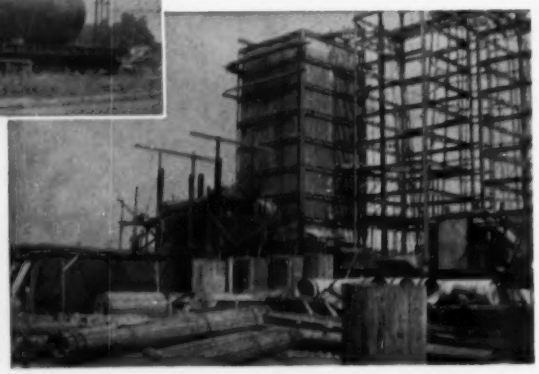

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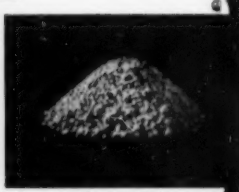

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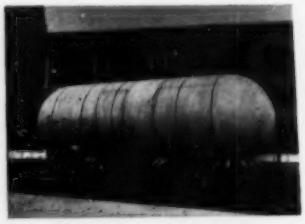

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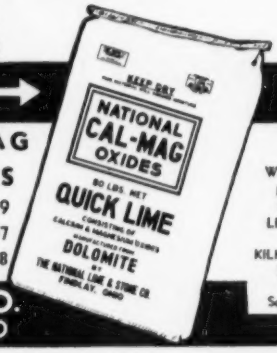

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1000 ATTEND AMMONIA INSTITUTE

Somewhere in the vicinity of a thousand packed the Jung Hotel, New Orleans, early last month when the 4th Annual Convention of the Agricultural Ammonia Institute was held. It has been only nine years since Dr. W. B. Andrews, Mississippi State, perfected the method now used to apply anhydrous ammonia, and a whole new industry has sprung up, beginning at the Delta and now reaching into thhe Great Plains and Great Lakes area, and to both coasts. 40 states now directly apply liquid nitrogen, and USDA estimates that more than 15% of our agricultural nitrogen is now applied directly as anhydrous ammonia, and that by the 1956-57 season it will reach 20%.

Among the speakers were two of the nation's foremost agronomists—Dr. W. A. Albrecht, University of Missouri soils department chairman and Dr. Firman E. Bear, recently retired chairman of the same department at Rutgers. Senator Ellender, who by the time you read this probably will be chairman of the Senate Agricultural Committee, spoke on the outlook for the year ahead.

Russell Coleman, NFA president, Ed Lipscomb public relations director of the National Cotton Council, retiring president E. W. Thomas, executive vice-president Jack Criswell and Charles W. Bourg made up the major list of speakers.

Mark C. Craft, Spring Hill, Ill. became the new president, with Tully W. Talbot of Audubon, Iowa, first vice-president; Charles Bourg of Lincoln, Neb., second vice-president; Allen Brown of Clarksdale, Miss., secretary; and Maj. Gen. (Retired-USA) Ralph H. Wooten of Memphis, Tenn., treasurer.

Joseph S. Whittington of Baltimore, Md., and E. W. Thomas of Boonville, Mo., outgoing president, were elected committeemen.

Dr. Bear said that the nitrogen industry is a phenomenal development that can revolutionize our ideas about the food-producing capacity of land.

"Certainly, crop yields can be raised another 50 per cent above present acreage levels by its use," he asserted. "And certainly, a lot of waste land can be brought into economic production by the use of nitrogen, in conjunction with other elements when the need arises."

The speaker said that it is important that very substantial investments be made in soil, plant, and animal research so that, by the time they are needed, "we shall have the answer to the very serious questions that will arise from the increasingly heavy use of nitrogen."

Present indications, he asserted, are that the current population of the United States of 162 million will have grown to more than 200 million by 1975 and to somewhere between 250 million and 300 million by the year 2000.

"This will make it necessary to expand our agricultural production both vertically and horizontally, and in both cases more nitrogen will be needed," he concluded.

"What is that unpredictable thing called Washington going to decide for us?" asked Ed Lipscomb. Worry over the answer to that question has given America a case of the jitters. And they won't get over it, he said, until individual action is taken to break the tightening grip of "big government."

"Despite all the things we possess, as a people we are anxious and disturbed. We have more clothes and chromium-plated appliances than we have confidence. We have more property than we have peace of mind," Mr. Lipscomb said.

This sense of uneasiness and apprehension, he continued, stemmed from a deep-seated fear of governmental encroachment. By this, he said he did not mean the present administration, the party in power, or the newly elected Congress. Rather, he referred to the "whole gargantuan sum total of federal power and agencies and influence and activities that today saturate the American scene."

Russell Coleman told them two basic but fundamentally conflicting problems face American agriculture. One deals with the short term—how to live with, or eliminate, farm-produced surpluses. The other deals with the long term—how to produce the increasing quantities of food and fiber that will be needed to feed and clothe our rapidly growing population.

"Insofar as the long-term problem is concerned, I think we all are agreed that commercial fertilizer is the most important tool available to man for producing his future food and fiber needs," he said.

"Many solutions have been suggested for solving our farm surplus problem. Perhaps the most common suggestion is that we simply ship our surplus food and fiber abroad to feed and clothe needy people in friendly foreign nations. A realistic appraisal of this suggestion reveals that when we do ship American farm products into other countries we may entirely upset foreign agricultural economies.

"American people will not stand for the destruction of food, as witness their reaction to the plowing under of cotton and the "killing of little pigs" during the great depression.

"The long-term answer to this short-term problem is simple. It is one which has been advocated for years by your Land-Grant Colleges. More recently, it has found an ardent advocate in the Secretary of Agriculture. It is simply to increase farm production efficiency through the more widespread application of improved farming practices.

The most effective tool within the reach of all farmers to accomplish this objective is the proper use of

commercial fertilizer. Fortunately, proper fertilizer usage also is the key to solution of the long-term food production problem.

What would be the result if the practice of properly using fertilizer were applied to **every** American farm?

In the case of cotton, farmers could easily afford to reduce their production from the recent average of 15 million bales to around 9 million bales—a quantity which would be more in line with the domestic market. This could be done without reducing the net return farmers currently realize from their cotton crop.

In the case of wheat—probably our most troublesome surplus problem—the results would be even more astounding. Average net profit per bushel could be approximately tripled—from around 15 cents to 45 cents. This means that the Nation's wheat crop could be cut to almost one-third of present production without sacrificing one dollar in net profits at present prices. Thus, the Nation's wheat farmers could realize as much net return from 385 million bushels of wheat as they currently realize from about 1 billion bushels. Under these circumstances, our present wheat surplus would quickly be converted into a shortage.

Applying the same principle to corn, we find that the same net profit could be derived from a 2-billion bushel crop as is presently realized from 3 billion bushels.

Obviously, the basic problem confronting American agriculture at present is not so much how to adjust production to demand, but how to do it **without reducing net farm income.** I believe you will agree that if commercial fertilizers were used properly, in accordance with experiment station recommendations, both of these problems could be solved.

Of course we must recognize that some sort of production controls would be necessary to limit total production to requirements. But we already have such controls on the basic commodities including wheat, cotton and corn which I have used as examples.

Many of you may think that this proposal is academic. Certainly, I would be the first to admit that none of us will see the day when this proposal is completely realized. But just as certainly, even a significant advance in the application by farmers of improved farming methods based on proven research results could be the real key to the solution of the current farm surplus problem.

Now, turning briefly to the longer-term problem of feeding our rapidly increasing population, I think that perhaps the most significant results from the above proposal would be the long-term benefits. In effect, the experiment stations are saying, "Let us produce maximum yields at minimum costs on as few acres as possible." If this advice were followed, American farmers would remove from cultivation millions of acres of land presently in need of rebuilding, but which undoubtedly will be needed to feed and clothe our future generations. For the future, this may prove to be a greater benefit than the short-term results.

There are numerous data to bear out the fact that maximum results and in most cases optimum results from an economic point of view, can be obtained only by using a balanced combination of the various plant food elements. The ideal combination naturally will vary from area to area and crop to crop.

Many of you already undoubtedly have had experiences showing that anhydrous ammonia alone does not produce maximum results unless the other plant food elements are present in the proper proportions. Nitrogen generally is recognized as the yield regulator among the plant food elements, and applied only in moderate quantities frequently will produce spectacular results if there is no shortage of the other elements. But it should be recognized that the portion of every crop which is harvested and removed from the land takes with it large quantities of all the plant foods. These must be replaced if the land is to continue to be fertile.

Commercial fertilizer is the most economical and easiest way of replacing these plant food losses. In fact, many soils can be made more productive than they ever were through the proper application of commercial fertilizer. You and I can be proud of the business we are in. Our products potentially can contribute more to the future welfare of the world than any other single factor. As an essential element in agricultural production, it is a key to the continuity of the world's civilization.

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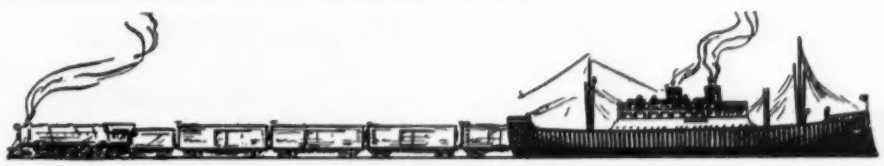

CF STAFF—COMPILED TONNAGE REPORTS

FERTILIZER TONNAGE REPORTS (in equivalent short tons)
Compiled by COMMERCIAL FERTILIZER Staff

State	November 1954	November 1953	October 1954	October 1953	September 1954	July-Aug.-Sept. Quarter 1954	July-Aug.-Sept. Quarter 1953	Year 1953-54
Alabama	.....	.....	95,870	36,539	45,520	77,244	64,373	1,087,763
Arkansas	.....	*	16,471[1]	*	11,649[1]	22,882[1]	*	366,225
Georgia	61,457	62,365	36,258	41,037	11,784	63,391	68,745	1,361,254
Louisiana	16,780	15,631	24,535	14,033	11,823	25,153	31,792	316,757
Missouri	15,836	22,355	83,927	60,694	83,912	147,678	140,041	756,457
N. Carolina	47,294	35,427	80,948	85,344	41,805	71,387	75,361	1,815,572
Oklahoma	4,080	4,818	21,914	14,601	19,084	30,201	47,269	144,367
S. Carolina	35,789	40,550	25,780	35,390	20,722	40,477	70,650	939,678
Tennessee	54,382	26,477	53,127	29,505	19,435	52,612	52,654	523,300
Texas	34,036	34,270	87,720	42,147	36,139	63,098	79,612	562,530
California			(reports submitted quarterly)			141,875	154,171	830,227
Indiana			(reports submitted quarterly)					1,180,091
Virginia			(reports submitted quarterly)			77,959	80,445	780,931
TOTAL	269,654	241,893	510,079	359,290	290,224	791,075	865,113	10,665,252

* Not Compiled [1] Omitted from column total to allow comparison. (Not yet reported)

MARKETS

ORGANICS: Supplies of fertilizer organics are exceedingly tight relative to the demand and there are practically no offerings currently in the market. CHICAGO SLUDGE TANKAGE is sold up through June 1955 and fertilizer manufacturers, in many instances, have bid $2.75 per unit Ammonia and 50¢ per unit APA FOB Chicago for supplies JULY 1955/forward. The Sellers have accepted such business through SEPTEMBER 1955 but declined beyond that month. DOMESTIC NITROGENOUS TANKAGE has sold recently at $4.75 per unit of Ammonia FOB Midwestern production points, in limited quantity, as the producers are otherwise sold up for many months. Previously available supplies of BLUE LUPINE MEAL are completely contracted for and no additional supplies in sight for the future.

CASTOR POMACE: Supplies exceedingly scarce, with no offerings from domestic sources currently available. Last sales made were at $35.00 per ton, in bags, FOB Northeastern production points. A very limited quantity of TEXAS/OKLAHOMA Production quickly sold recently at $32.00 to $35.00 per ton, in bags, FOB Texas points.

DRIED BLOOD: Chicago market is relatively quiet with last business done at around $6.75/7.00 per unit of Ammonia, unground in bags. The NEW YORK market is around $7.00.

POTASH: Movement of domestic Potash against contracts is picking up as the season advances. MURIATE OF POTASH appears to be in adequate supply but demand somewhat exceeds supply of SULPHATE OF POTASH.

GROUND COTTON BUR ASH: Interest in this source of Potash, primarily in the form of Carbonate Potash, is somewhat more active, in view of current demands for Sulphate of Potash. Ground Cotton Bur Ash is currently testing 38 to 40% K20 and is available for immediate and future shipments. Delivered cost approximates delivered cost of Domestic Sulphate of Potash.

PHOSPHATE ROCK: Movement of this fundamental fertilizer raw material is in seasonal dimensions. Cost of oil and labor has advanced recently resulting in somewhat higher contract bases for current contracts.

SUPERPHOSPHATE: Supplies continue adequate and prices remain relatively steady for normal grade superphosphate. TRIPLE SUPERPHOSPHATE production has expanded to the point where demand and supply are in good balance.

AMMONIUM NITRATE: Demand is in seasonal dimensions and prices steady. Supplies for the new season are expected to be entirely sufficient to satisfy the demand.

SULPHATE OF AMMONIA: Demand is expected to increase beginning this month, expanding during the later months. Prices relatively steady.

NITRATE OF SODA: Stocks of imported material are being built up in anticipation of season's requirements. Prices remain unchanged.

GENERAL: Most fertilizer raw materials for the new season appear to be sufficient to meet the demand with exception of ORGANIC AMMONIATES. These are in very tight supply with prices firm and advancing.

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Standards Discussed at ASA Symposium

At the Agricultural Symposium during the Fifth National Conference on Standards, held recently, speakers discussed benefits of standards to the grower of nursery stock, to dealers and to the purchasers of trees, shrubs and plants, and to persons interested in seed standards and pest control.

The American Standards Association is the national clearing-house for voluntary engineering, industrial, safety and consumer standards. It is made up of 115 technical societies, trade associations, consumer groups, and 2300 individual company members. ASA is the United States member of the International Organization for Standardization (ISO).

J. E. Archer, American Cyanamid, spoke on Pesticide Chemical Nomenclature from a legal point of view November 16, 1954.

The desirability of having common names for pest control chemicals uniform throughout the world is believed to be obvious to everyone, he said. However, the establishment of a common name which will be acceptable throughout the world is not as easy as it might be supposed. First of all, it is desirable that the common name be one which will be acceptable to those speaking different languages. It should also be one which complies with the general standards which have been devised by technical people so that it will not be misdescriptive and so that, if possible, it will be suggestive of the type of chemical compound to which it pertains.

Herbert L. Haller, USDA, talked on common names for pest control chemicals.

The past decade has witnessed the development of an unusually large number of chemicals useful for the control of injurious insects, fungi, weeds, nematodes and rodents. For such chemicals the generic term pesticidal chemicals has been proposed. Unfortunately the term pesticidal chemical has received only limited acceptance and the term pesticide is widely used to designate the active ingredient as well as the finish or formulated product.

It seems desirable and perhaps even urgent, in view of the many new pesticidal chemicals that are making their appearance, that some conventional abbreviated common names be developed that are as simple as possible and that can be remembered with a minimum of effort.

That there is a world-wide interest in the subject is evidenced by the fact that at the Third International Congress of Crop Protection, held in Paris in September, 1952, a special session was held to consider the problems involved. After devoting a full morning to various aspects of the problem, the following recommendation was made to the Executive Council of the Congress: This Congress, having considered the problems arising in the nomenclature of the many complex substances used in the field of crop protection (pest control) and the desirability of achieving world-wide uniformity in the common names for these compounds, recommends:

1. That where they do not already exist, organization should be set up by members of the congress in their own countries to adopt common names for chemicals used in crop protection.

2. That such organizations should establish close liaison with each other and with the International Standards Organization and, if possible, should elicit the cooperation of the Committee on Phytopharmacy.

While an international approach to the problem is essential, there was a question in the minds of some as to whether or not an international organization might be somewhat slow in arriving at names satisfactory to all. Also, at a meeting of the Interdepartmental Committee on Pest Control, held on September 24, 1953, the Committee decided to discontinue the approval of coined names for pesticidal chemicals.

Following several meetings arranged by the American Standards Association, and attended by the several groups mentioned earlier, as well as others, a formal Committee known as ASA Sectional Committee K62 on Common Names for Pest Control Chemicals was established on February 25, 1954. The scope of the Committee is to develop common names for pest control chemicals having potential use as pesticides, including insecticides, fungicides, rodenticides, herbicides, nematocides, defoliants, and plant growth regulators, where such names appear desirable for popular designations of the chemicals. The United States Department of Agriculture accepted the ASA invitation to assume Administrative Sponsorship of the Committee. The National Agricultural Chemicals Association offered to assist the Department in its sponsorship functions relating to duplication and circulation of printed material. The ASA staff has cooperated fully in the organizational and procedural problems arising from the work. On August 17, 1954, the ASA approved the personnel of the Committee. It consists of representatives of the following organizations:

American Chemical Society

American Medical Association

American Phytopathological Society

American Society for Horticultural Science

Association of Economic Poisons Control Officials

Association of Regional Weed Control Conferences

Canadian Standards Association

Chemical Specialities Manufacturers Association, Inc.

Entomological Society of America

Interdepartmental Committee on Pest Control

National Agricultural Chemicals Association

U. S. Trade Mark Association

Dr. H. L. Haller, Assistant Director of Corps Research, Agricultural Research Service, United States Department of Agriculture, is chairman, and J. A. Noone, National Agricultural Chemicals Association, Washington, D. C., is secretary of the Committee.

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FOR SALE: Automatic batch mixing unit, including elevator, shaker screen, Bins. Complete, ready to run. Box # 50, c/o Commercial Fertilizer, 75 Third St., N. W. Atlanta, Ga.

FOR SALE: 1 model No. 2224 Exact Weight Sacking Scales. Slightly used, new in April 1954. Klein Soil Service, Fowlerville, Michigan.

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Announcement

Official Publication (#8) published by the Association of American Fertilizer Control Officials is available at $2.00 per copy. Special discount on lots of 100 or more copies.

The publication contains official definitions of the major fertilizer terms, proceedings of the 1954 annual meeting, model fertilizer bill, summary of present states fertilizer laws, up-to-date list, addresses and telephone numbers of all fertilizer control officials in the United States and Canada.

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OBITUARIES

Harry E. Eyster, traffic manager and assistant sales manager of The J. E. Baker Company, York, Pa., November 22.

Edward Fitzhugh Lee, 75, long-retired transporation superintendent of Virginia-Carolina Chemical, November 29, in Richmond, Virginia.

"Payloader" Shovel Has Torque Converter

The Frank G. Hough Co. announces an improved "Payloader" tractor-shovel with bucket capacity of 1 cu. yd. Payload and ¾ cu. yd. struck load. Designated as the Model HFC, it is a rear-wheel drive model and features a combination of a special new Hough-built transmission, plus torque-converter drive.

The torque-converter is of the self-cooled, 3-element type which automatically multiplies torque output of the engine in direct proportion to the load requirements. Some of the advantages that torque converter add to the Model HFC operation are a substantial reduction in the amount of gear-shifting and "clutching"

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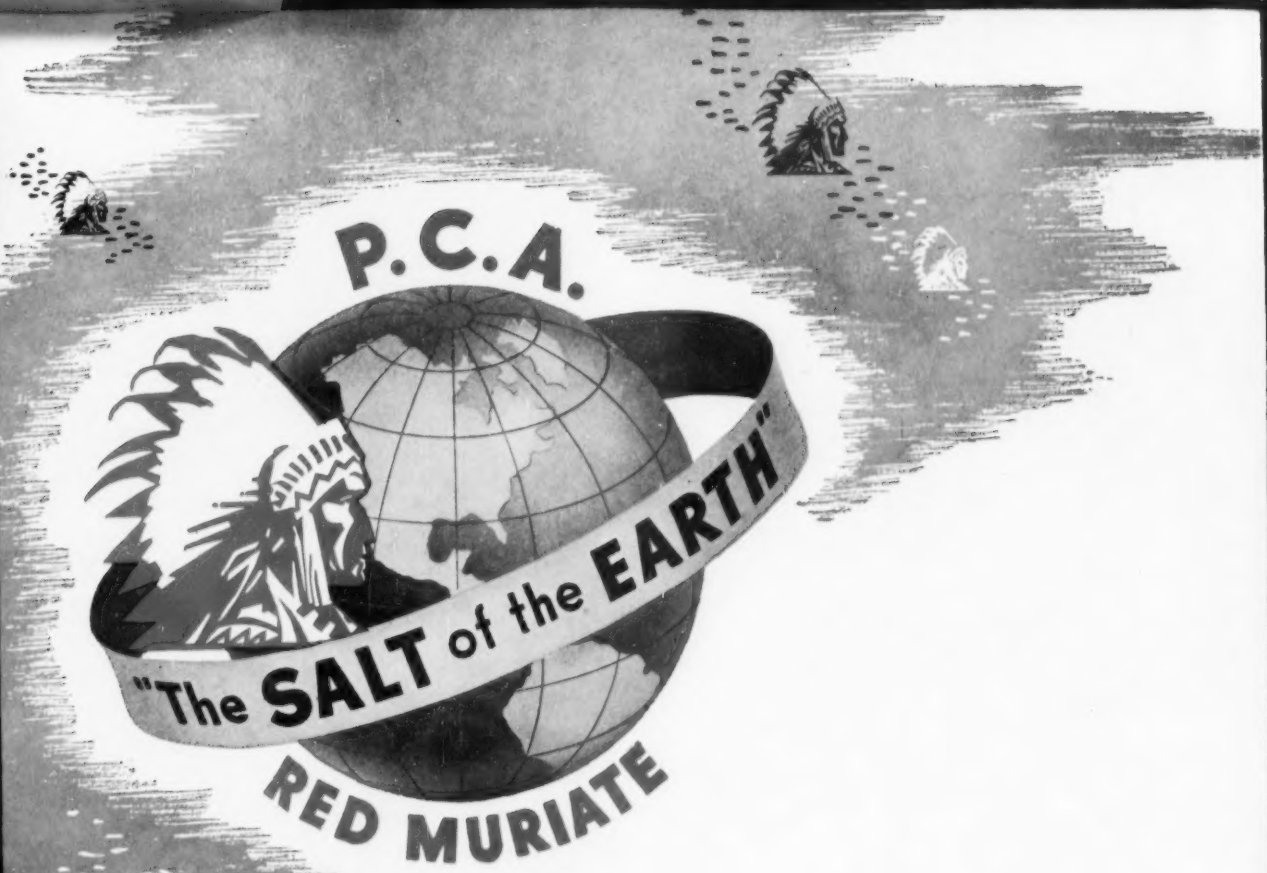
Link-Belt Announces Railroad Car Spotter

One man can easily spot six loaded railroad cars at one time, or handle scores of tasks involving horizontal haulage (in either direction or around corners) with the aid of a Link-Belt car spotter. The spotters consist of a vertical capstan, helical and worm gear drive, heavy housing, and integral motor. By wrapping two or three turns of rope around the capstan, one man has up to 10,000-pound starting rope pull at his disposal with the 10-h.p. model. Larger loads can be handled by car pullers, with horizontal drums and up to 30 h.p. motors. Engineering information, instructions for calculating rope pulls and typical layouts for both car spotters and car pullers are available in Book 2092, published by Link-Belt Company, 307 N. Michigan Ave., Chicago.

J-M Issues Celite Folder

Celite Catalyst Carriers is the title of a new 4-page folder just issued by Johns-Manville. It concisely describes the advantages of Celite diatomite catalyst carriers such as uniformity, microporosity, low density, thermal stability and great surface area. Essential data on each type is given in tabular form for easy reference and variation in appearance among the types is shown in clear, close-up photographs. Designed primarily for research chemists and chemical engineers who specify materials for catalyst support throughout the process industries, copies of this folder are now available from Johns-Manville, 22 East 40th Street, New York 16.



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